97

PHOTOFACT* Folder

EMERSON MODELS 614, B, BC, C, 637, B, BC, C (CH. 120110, B, BC, C), 644, B, BC, C, 647, B, BC, C (CH. 120113, B, BC, C), 648B (CH. 120110E)

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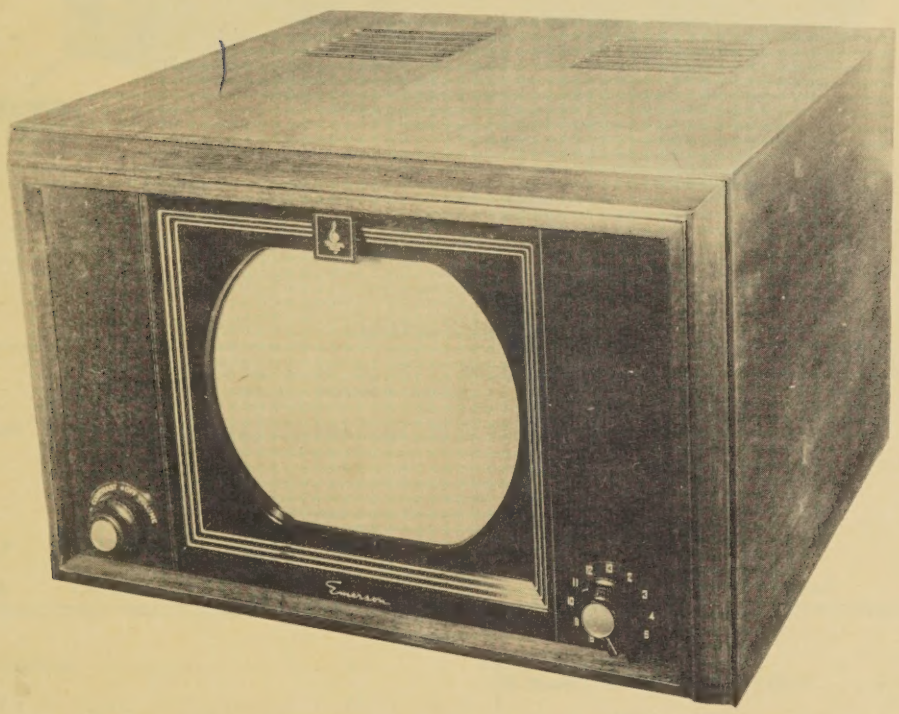

MODEL 637C

EMERSON MODELS 614, B, BC, C, 637, B, BC, C (CH. 120110, B, BC, C), 644, B, BC, C, 647, B, BC, C (CH. 120113, B, BC, C), 648B (CH. 120110E)

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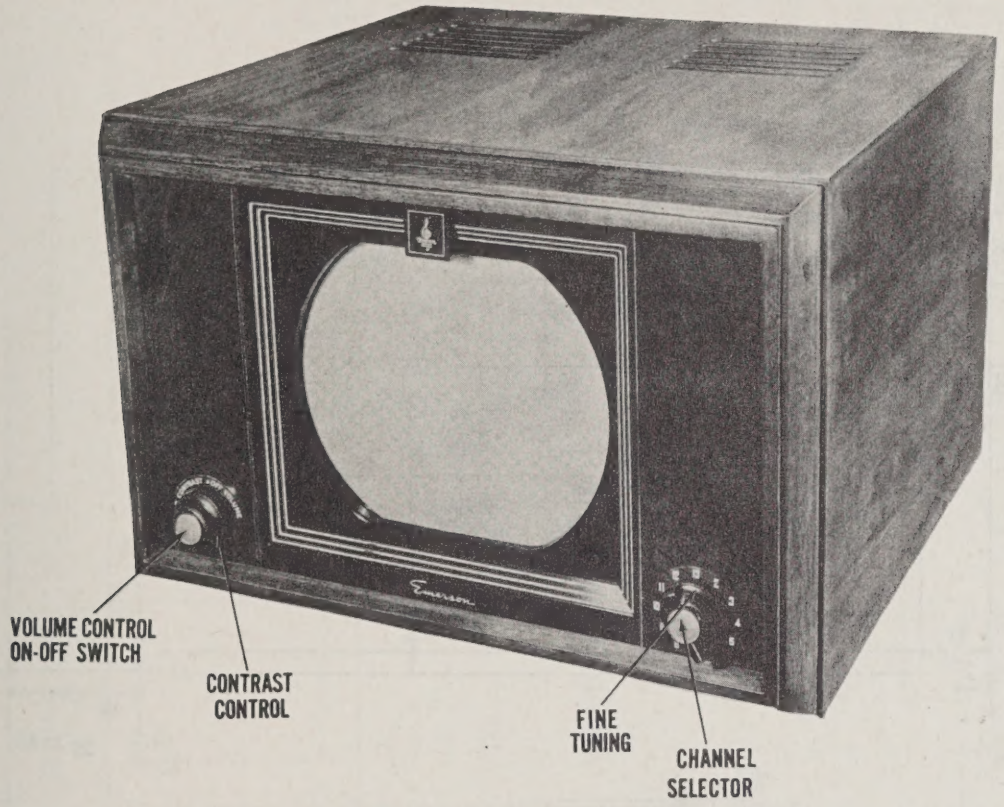
EMERSON MODELS 614, B, BC, C, 637, B, BC, C, 644B, BC, C, 647B, BC, C, 648B



EMERSON MODEL 637C

TRADE NAME	Emerson, Models 614, B, BC, C, 637, B, BC, C (Ch. 120110, B, BC, C), 644, B, BC, C, 647, B, BC, C (Ch. 120113, B, BC, C), 648B (Ch. 120110E)
MANUFACTURER	Emerson Radio and Phonograph Corp., 111 8th Ave., New York, New York
TYPE SET	Television Receiver
TUBES	Twenty Three or Twenty Four
POWER SUPPLY	105-125 Volts AC-60 Cycle
TUNING RANGE	Channels 2 thru 13 RATING 2 Amp. at 117 Volts AC

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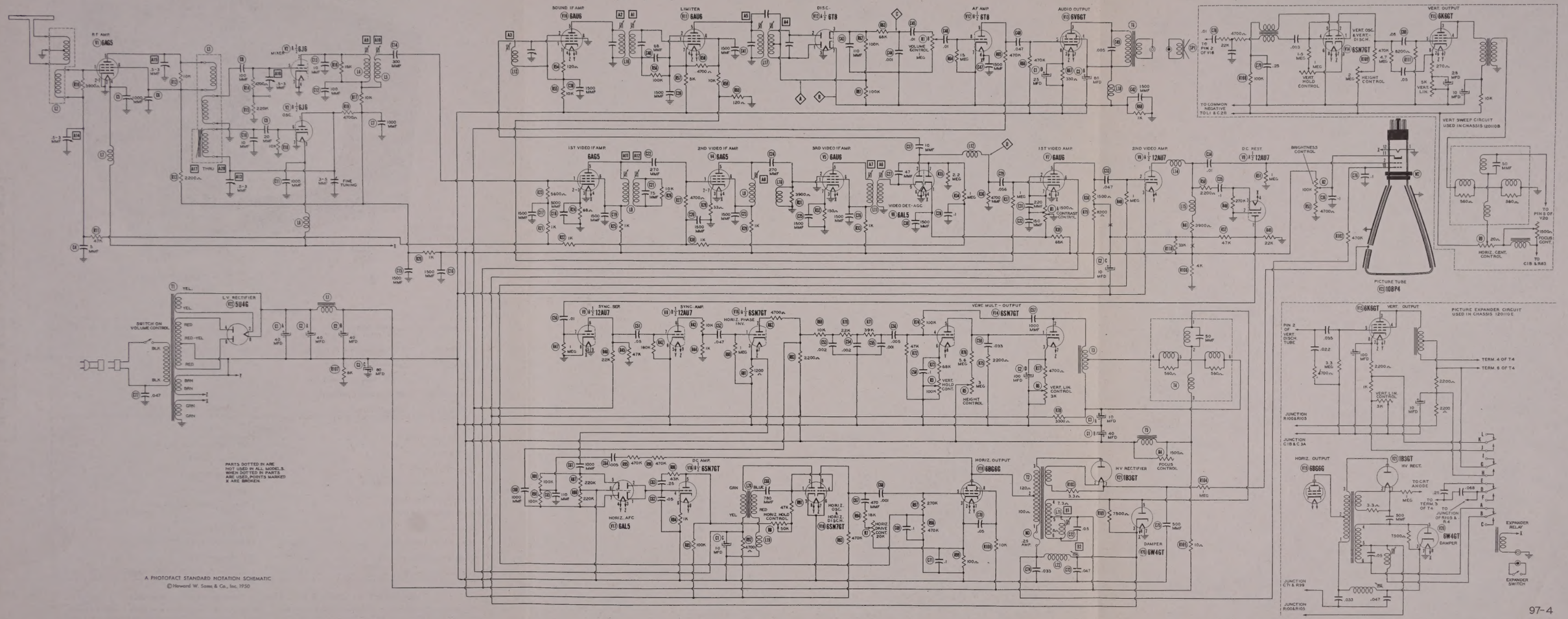
EMERSON MODELS 614, B, BC, C, 637, B, BC, C, 644B, BC, C, 647B, BC, C, 648B


R.F. AMP. V1 6AG5
MIXER V2 ½ 6J6
OSC. V2 ½ 6J6
SOUND I.F. AMP. V10 6AU6
LIMITER V11 6AU6
DISC. V12 ½ 6T8
A.F. AMP. V12 ½ 6T8
AUDIO OUTPUT V13 6V6GT
VERT. OUTPUT V15 6K6GT
VERT. OSC. & VERT. DISCH. V14 6SN7GT
1ST VIDEO I.F. AMP. 6AG5
2ND VIDEO I.F. AMP. V4 6AG5
3RD VIDEO I.F. AMP. V5 6AU6
VIDEO DET.-AGC V6 6AL5
1ST VIDEO AMP. V7 6AU6
2ND VIDEO AMP. V8 ½ 12AU7
D.C. REST. V8 ½ 12AU7
BRIGHTNESS CONTROL
PICTURE TUBE V17 10BP4
VERT. SWEEP CIRCUIT USED IN CHASSIS 120110B
SYNC. SEP. V9 ½ 12AU7
SYNC. AMP. V9 ½ 12AU7
HORIZ. PHASE INV. V10 ½ 6SN7GT
VERT. MULT.-OUTPUT V14 6SN7GT
D.C. AMP. V16 ½ 6SN7GT
HORIZ. AFC V17 6AL5
HORIZ. OSC.-HORIZ. DISCH. V18 6SN7GT
HORIZ. OUTPUT V19 6BG6G
H.V. RECTIFIER V20 1B3GT
DAMPER V21 6W4GT
L.V. RECTIFIER V22 5U4G
SWITCH ON VOLUME CONTROL
PICTURE EXPANDER CIRCUIT USED IN CHASSIS 120110E
PARTS DOTTED IN ARE NOT USED IN ALL MODELS. WHEN DOTTED IN PARTS ARE USED, POINTS MARKED X ARE BROKEN.
A PHOTOFACT STANDARD NOTATION SCHEMATIC
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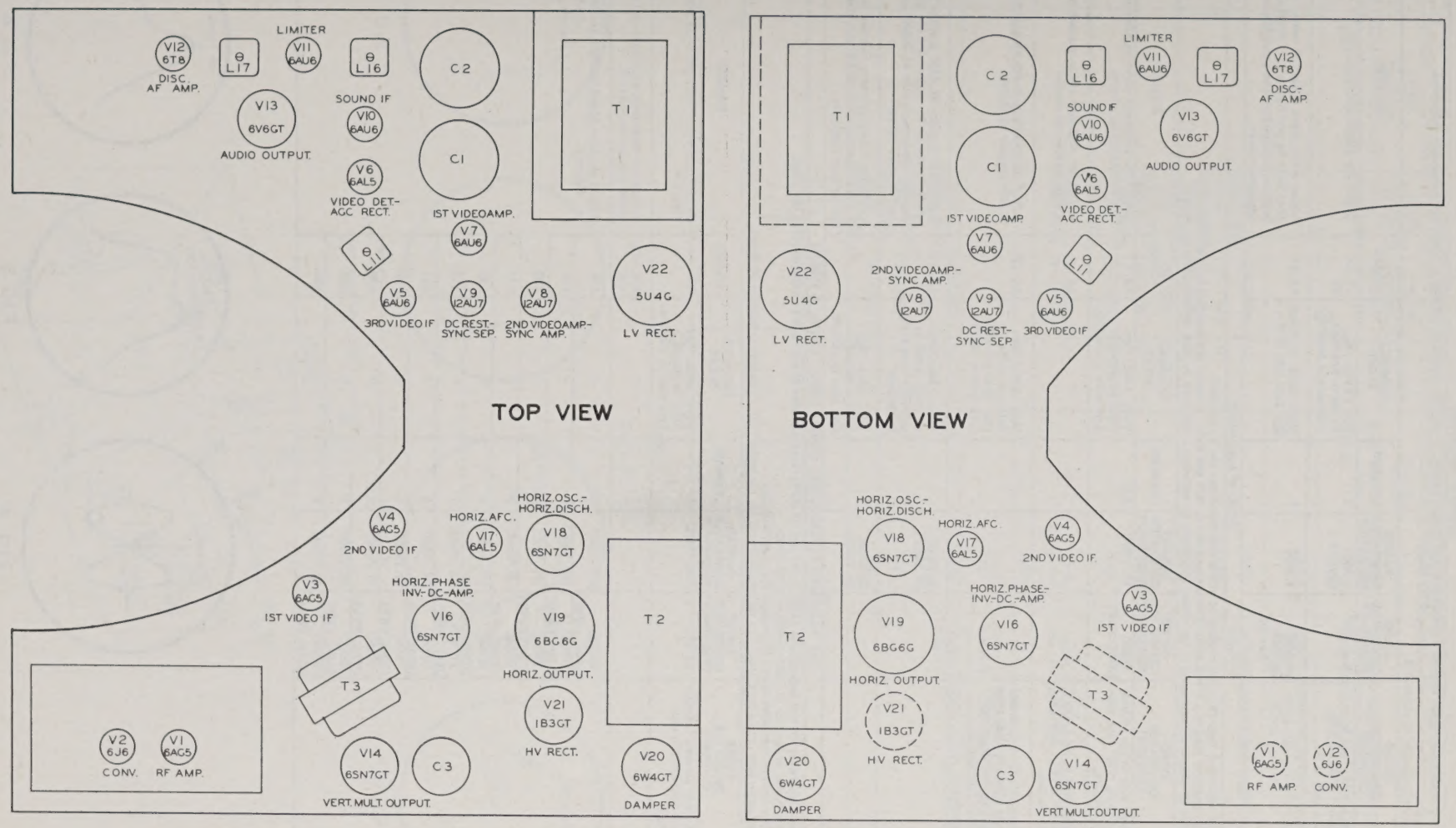
97-4



TUBE PLACEMENT CHART

EMERSON MODELS 614, B, BC, C, 637, B, BC, C, 644B, BC, C, 647B, BC, C, 648B

ALIGNMENT INSTRUCTIONS

SOUND IF ALIGNMENT

Use frequency modulated signal with 60 ∿ modulation and 450KC sweep. Use 120 ∿ sawtooth voltage in scope for horizontal deflection.
Turn the contrast control to the mid-position of its range.
Turn the channel selector to channel 3.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
1.	.001MFD	High side to pin 2 (plate) of 6AL5 (V6). Low side to B-.	Not used	4.5MC (Unmod.)	3	Use VTVM. DC Probe to Point (A). Common to Point (B).	A1, A2, A3	Adjust for maximum amplitude
2.	.001MFD	"	4.5MC (450KC Sweep)	4.5MC	"	Vert. Amp. to Point (C). Low side to B-.	A4, A5	Adjust A4 to place 4.5MC at center of cross-over lines as per figure 2. Adjust A5 for maximum amplitude and straightness of crossover lines.

VIDEO IF ALIGNMENT

Remove the converter tube (V2) and replace it with a 6J6 which has pin 2 removed.
Connect the negative lead of a 3 volt battery to the junction of R22 and R30. Connect the positive lead to chassis.
During video IF alignment attenuate to the sweep generator to maintain 1 volt peak to peak deflection on the scope.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
3.	.001MFD	High side to pin 1 (Grid) of 6AU6 (V5). Low side to chassis.	24MC (10MC SWP)	25.75MC	Any	Vert. Amp. thru 10KΩ to point (D). Low side to chassis.	A6, A7	Adjust for response curve similar to figure 3 with marker as shown.
4.	.001MFD	High side to pin 1 (Grid) of 6AG5 (V4). Low side to chassis.	"	"	"	"	A8	Adjust for response curve similar to figure 4 with marker as shown.
5.	Direct	High side to ungrounded tube shield floating over dummy converter tube (V2). Low side to chassis.	"	"	"	Vert. Amp. thru detector probe (fig. 5) to point (E). Low side to chassis.	A9, A10	Adjust for response curve similar to figure 6 with marker as shown.
6.	Direct	"	"	21.25MC 22.8MC	"	Vert. Amp. thru detector probe to point (F). Low side to chassis.	A11, A12	Adjust A11 to place 22.8MC marker as shown in figure 7. Adjust A12 for minimum marker indication at the 21.25MC point on response curve.
7.	Direct	"	"	22.25MC 25.75MC	"	Vert. Amp. thru 10KΩ to point (D). Low side to chassis.		Check for response curve similar to figure 8. If necessary retouch A8, A11 and A12 for proper response.

RF ALIGNMENT (TUNER NOS. 470603, 470604, 470605, & 470607)

The overall oscillator circuit adjustment (A13) is pre-set at the factory and should not require adjustment in the field.
Set the fine tuning control to the mid-position of its range.
Remove the dummy converter tube and replace the original tube.
The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
8.	Two 120Ω carbon res.	Across antenna terminals with 120Ω in each lead.	207MC	209.75MC	12	Vert. Amp. thru 10KΩ to point (C). Low side to chassis.	A17	Adjust to place sound marker as shown in figure 9.
9.	"	"	"	"	"	"	A14, A15, A16	Adjust for maximum amplitude and bandwidth similar to figure 9.
10.	"	"	213MC (10MC SWP)	215.75MC	13	"	A18	Adjust to place sound marker as shown in figure 9.
			201MC (10MC SWP)	203.75MC	11	"	A19	
			195MC (10MC SWP)	197.75MC	10	"	A20	
			189MC (10MC SWP)	191.75MC	9	"	A21	
			183MC (10MC SWP)	185.75MC	8	"	A22	
			177MC (10MC SWP)	179.75MC	7	"	A23	
			85MC (10MC SWP)	87.75MC	6	"	A24	
			79MC (10MC SWP)	81.75MC	5	"	A25	
			69MC (10MC SWP)	71.75MC	4	"	A26	
			63MC (10MC SWP)	65.75MC	3	"	A27	
			57MC (10MC SWP)	59.75MC	2	"	A28	

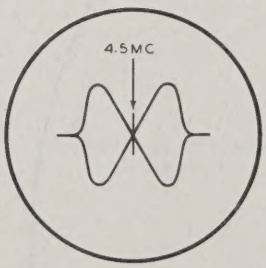


FIG. 2

FIG.3

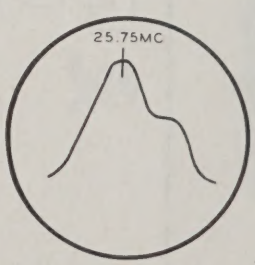


FIG.4

ALIGNMENT INSTRUCTIONS (CONT.)

RF TUNER ALIGNMENT (TUNER NO. 470233)

Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection. The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
8.	Two 150Ω carbon res.	Across antenna terminals with 150Ω in each lead.	213MC (10MC SWP)	211.25MC 215.75MC	13	Vert. Amp. to Point C. Low side to chassis.	A601, A602, A603, A604	Adjust for maximum amplitude and band-pass similar to figure 9. Keep slug pairs at approximately the same relative position.
9.	"	"	"	"	"	"	A609, A610	Adjust to place sound marker as shown in figure 9. Keep slug pairs at approximately the same relative position.
10.	"	"	207MC (10MC SWP)	209.75MC	12	"	A611	Adjust to place sound marker as shown in figure 9.
			201MC (10MC SWP)	203.75MC	11		A612	
			195MC (10MC SWP)	197.75MC	10		A613	
			189MC (10MC SWP)	191.75MC	9		A614	
			183MC (10MC SWP)	185.75MC	8		A615	
			177MC (10MC SWP)	179.75MC	7		A616	
11.	"	"	85MC (10MC SWP)	83.25MC 87.75MC	6	"	A605, A606, A607, A608	Adjust for maximum amplitude and band-pass similar to figure 9.
12.	"	"	"	"	"	"	A617, A618	Adjust to place sound marker as shown in figure 9. Keep slug pairs at approximately the same relative position.
13.	"	"	79MC (10MC SWP)	81.75MC	5	"	A619	Adjust to place sound marker as shown in figure 9.
			69MC (10MC SWP)	71.75MC	4		A620	
			63MC (10MC SWP)	65.25MC	3		A621	
			57MC (10MC SWP)	59.75MC	2		A622	

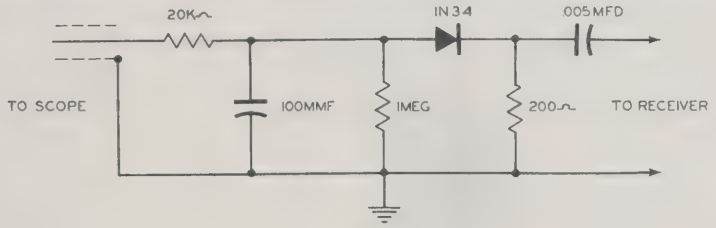


FIG.5

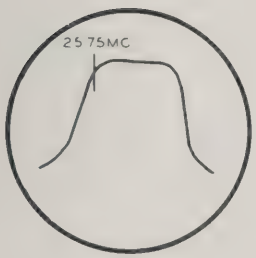


FIG.6

FIG.7

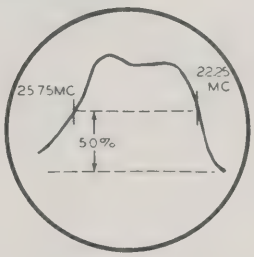


FIG.8

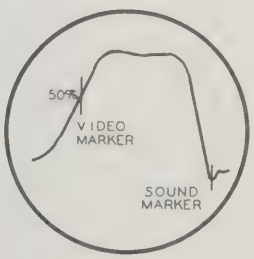
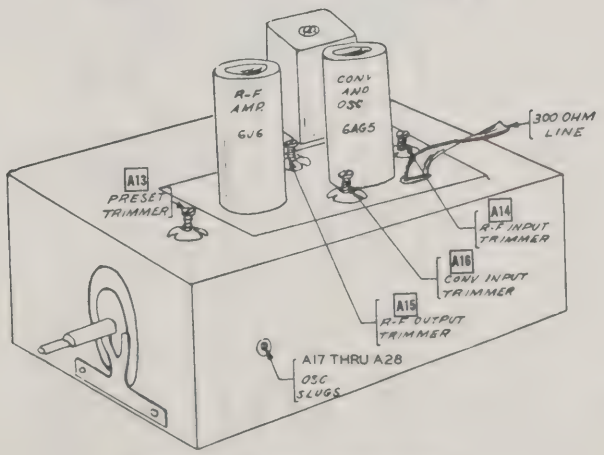


FIG.9



RF ALIGNMENT POINTS - TUNER # 470605
(See page 10 for Tuners 470603, 470604, & 470607)

VOLTAGE AND RESISTANCE MEASUREMENTS

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6AG5	-.8VDC	0V.	0V.	6.3VAC	140VDC	140VDC	0V.		
V 2	6J6	80VDC	80VDC	6.3VAC	0V.	-3.4VDC	6-7.1VDC	0V.		
V 3	6AG5	-1.3VDC	.5VDC	0V.	6.3VAC	130VDC	130VDC	.5VDC		
V 4	6AG5	-.5VDC	.3VDC	0V.	6.3VAC	130VDC	130VDC	.3VDC		
V 5	6AU6	0V.	0V.	0V.	6.3VAC	130VDC	130VDC	1 VDC		
V 6	6AL5	.5VDC	-.5VDC	0V.	6.3VAC	0V.	0V.	-.5VDC		
V 7	6AU6	-.2VDC	2.2 VDC	6.3VAC	0V.	225VDC	150VDC	2.2 VDC		
V 8	12AU7	▲310VDC	▲-1.4VDC	▲0V.	▲0V.	▲0V.	▲145VDC	▲-2.2VDC	▲0V.	▲6.3VAC
V 9	12AU7	43VDC	0V.	3.6VDC	6.3VAC	6.3VAC	35VDC	-.2VDC	0V.	0V.
V 10	6AU6	▲85VDC	▲85VDC	▲0V.	▲6.3VAC	▲215VDC	▲215VDC	▲85VDC		
V 11	6AU6	▲50VDC	▲55VDC	▲0V.	▲6.3VAC	▲215VDC	▲100VDC	▲55VDC		
V 12	6T8	-30VDC	-30VDC	-27VDC	6.3VAC	0V.	0V.	-29VDC	-30VDC	19VDC
V 13	6V6GT	▲0V.	▲6.3VAC	▲175VDC	▲185VDC	▲0V.	▲0V.	▲0V.	9.4VDC	
V 14	6SN7GT	▲17VDC ▲25VDC	▲440VDC	▲41VDC ▲44VDC	▲-.2VDC	▲17VDC ▲25VDC	▲2.2VDC ▲4VDC	▲6.3VAC	▲0V.	
V 15		NOT USED IN ALL MODELS.								
V 16	6SN7GT	▲0V.	▲300VDC	▲11VDC	▲-.3VDC	▲43VDC	▲1.2VDC	▲6.3VAC	▲0V.	
V 17	6AL5	▲-.4VDC	▲-.4VDC	▲6.3VAC	▲0V.	▲12VDC	▲0V.	▲15VDC		
V 18	6SN7GT	▲-50VDC ▲-55VDC	▲320VDC	▲0V.	▲-50VDC ▲-55VDC	▲60VDC	▲0V.	▲6.3VAC	▲0V.	
V 19	6BG6G	▲0V.	▲6.3VAC	▲8.7VDC	▲-4.7VDC	▲-5.9VDC	▲-.2VDC	▲0V.	▲250VDC	TOP CAP *
V 20	6W4GT	0V.	0V.	250VDC	0V.	150VDC	0V.	0V.	6.3VAC	
V 21	1B3GT	* DO NOT MEASURE.								
V 22	5U4G	0V.	180VDC	155VDC	400VAC	0V.	400VAC	155VDC	180VDC	
V 23	10BP4	0V.	0V.	PIN 10 220VDC	PIN 11 130VDC 26VDC	PIN 12 6.3VAC				

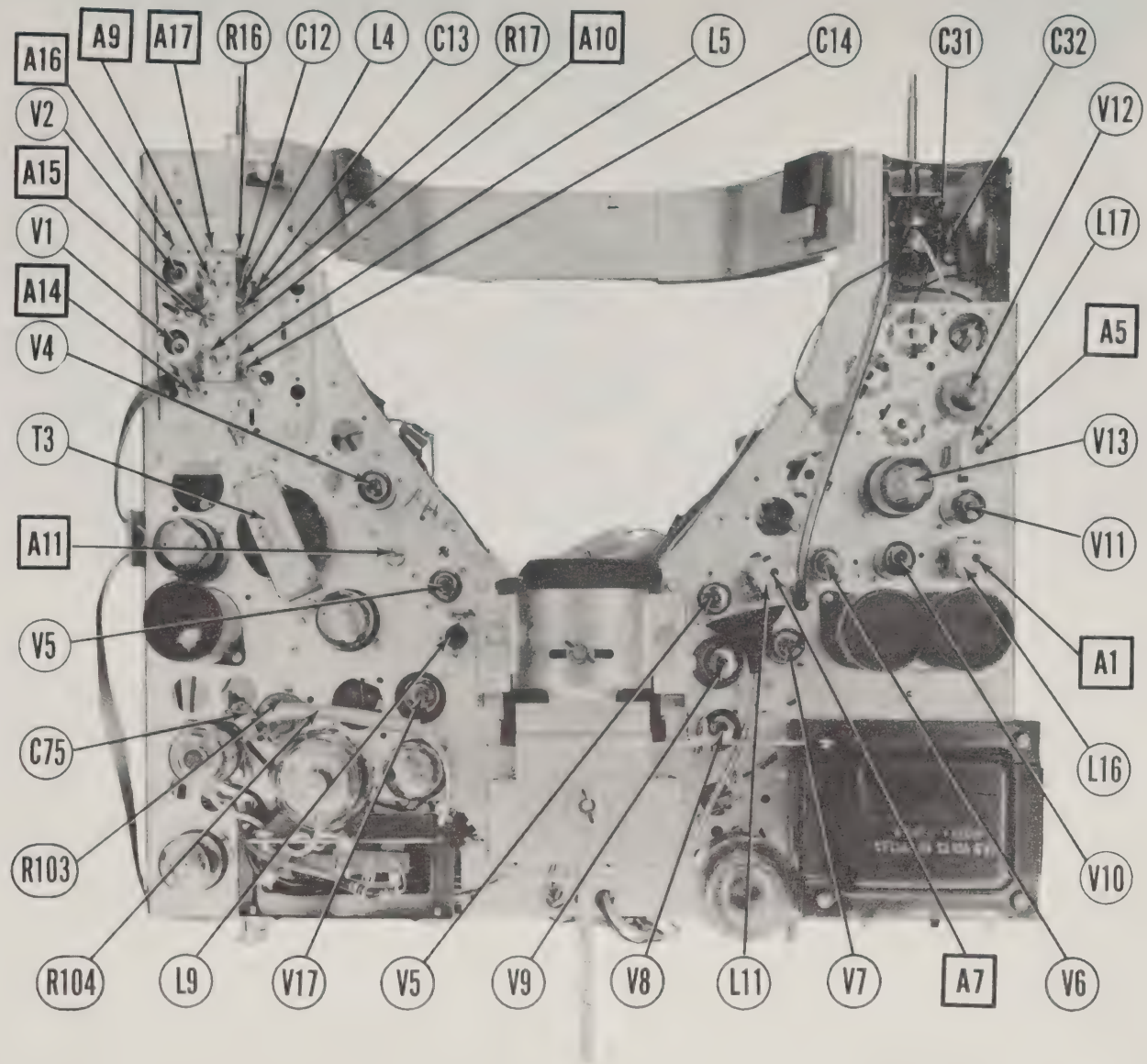
▲ MEASURED FROM PIN 3 OF V8
* DO NOT MEASURE.

RESISTANCE READINGS

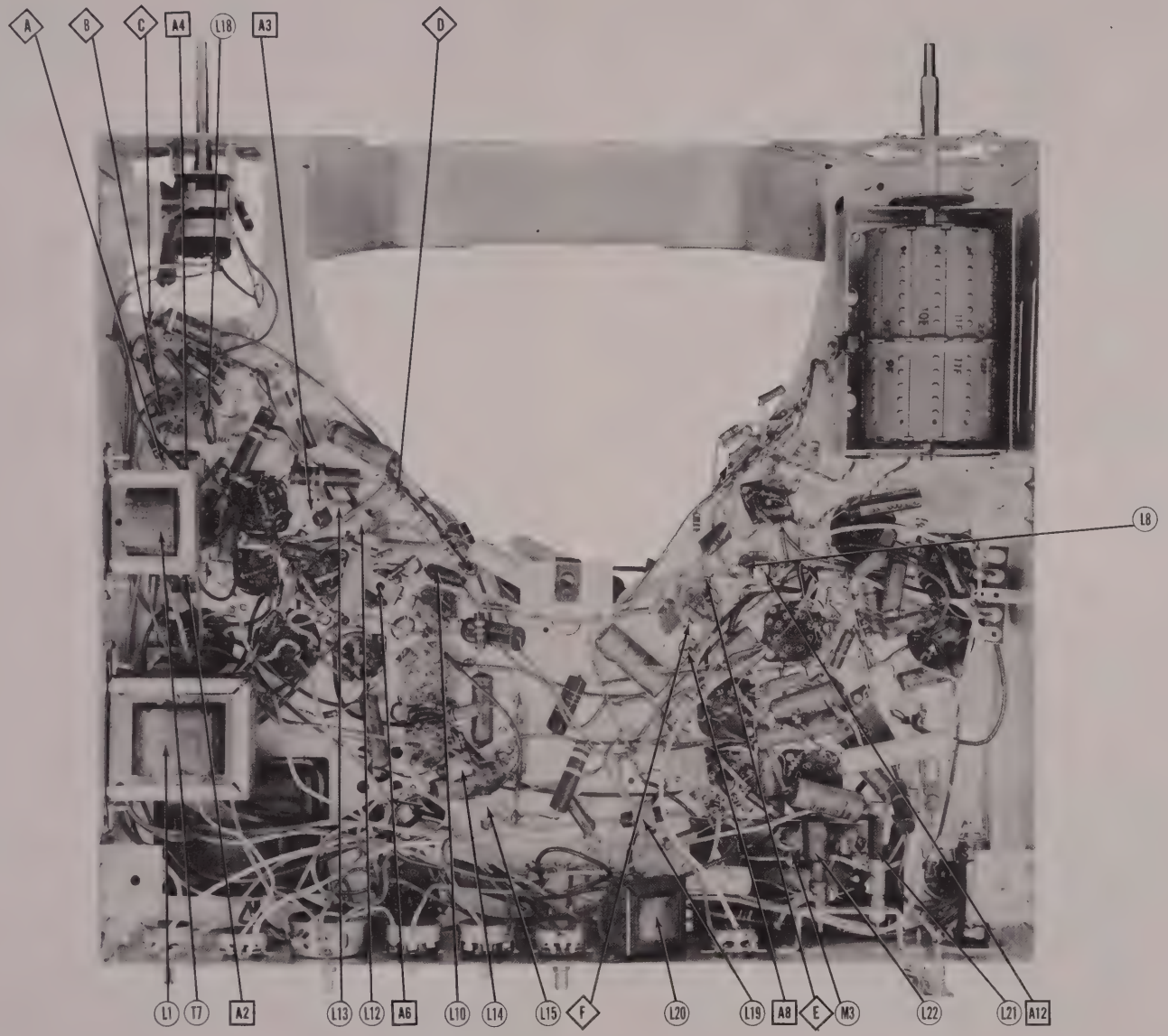
Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6AG5	3.2 Meg.	0Ω	0Ω	.1Ω	†3.3KΩ	†3.3KΩ	0Ω		
V 2	6J6	†5KΩ	†11KΩ	.1Ω	0Ω	225KΩ	10KΩ	0Ω		
V 3	6AG5	3.2 Meg.	68Ω	0Ω	.1Ω	†1.3KΩ	†1.3KΩ	68Ω		
V 4	6AG5	3.2 Meg.	33Ω	0Ω	.1Ω	†1.3KΩ	†1.3KΩ	33Ω		
V 5	6AU6	3Ω	0Ω	0Ω	.1Ω	†1.3KΩ	†1.3KΩ	150Ω		
V 6	6AL5	1Ω	4.7KΩ	0Ω	.1Ω	1Ω	0Ω	2.2 Meg.		
V 7	6AU6	1 Meg.	1.5KΩ	.1Ω	0Ω	#10KΩ	†110Ω	1.5KΩ		
V 8	12AU7	†4KΩ	1.5 Meg.	▲0Ω	▲0Ω	▲0Ω	11KΩ	▲180KΩ	▲0Ω	▲.1Ω
V 9	12AU7	†16KΩ	0Ω	270KΩ	.1Ω	.1Ω	†20KΩ	1 Meg.	0Ω	0Ω
V 10	6AU6	▲10KΩ	▲10KΩ	▲0Ω	▲.1Ω	2.5Ω	0Ω	▲10KΩ		
V 11	6AU6	▲105KΩ	▲3.8KΩ	▲0Ω	▲.1Ω	2Ω	▲6KΩ	▲3.8KΩ		
V 12	6T8	100KΩ	100KΩ	200KΩ	.1Ω	0Ω	Inf.	1000Ω	15 Meg.	†475KΩ
V 13	6V6GT	Inf.	▲.1Ω	1.3KΩ	1000Ω	▲470KΩ	▲0Ω	▲0Ω	▲330Ω	
V 14	6SN7GT	†8.6 Meg.	#4.3KΩ	▲6.3KΩ ▲3.3KΩ	▲47KΩ	†8.6KΩ	▲168KΩ ▲68KΩ	▲.1Ω	▲0Ω	
V 15		NOT USED IN ALL MODELSΩ								
V 16	6SN7GT	▲1 Meg.	†7KΩ	▲1.2KΩ	Inf.	†100KΩ	▲1000Ω	▲.1Ω	▲0Ω	
V 17	6AL5	Inf.	Inf.	▲.1Ω	▲0Ω	▲130KΩ	▲0Ω	▲130KΩ		
V 18	6SN7GT	†150KΩ †200KΩ	†4.8KΩ	▲0Ω	†150KΩ †200KΩ	†470KΩ	▲0Ω	▲.1Ω	▲0Ω	
V 19	6BG6G	Inf.	▲.1Ω	▲100Ω	▲300KΩ	▲550KΩ	▲120KΩ	▲0Ω	†10KΩ	TOP CAP #135Ω
V 20	6W4GT	Inf.	Inf.	#0Ω	Inf.	†120Ω	Inf.	0Ω	.1Ω	
V 21	1B3GT	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	TOP CAP #250Ω
V 22	5U4G	Inf.	3KΩ	3KΩ	4.7KΩ	Inf.	4.7KΩ	3KΩ	3KΩ	
V 23	10BP4	0Ω	1 Meg.	PIN 10 #470KΩ	PIN 11 29KΩ 4.7KΩ	PIN 12 .1Ω				

† MEASURED FROM PIN 8 OF V22.
# MEASURED FROM PIN 3 OF V20.
▲ MEASURED FROM PIN 3 OF V8.

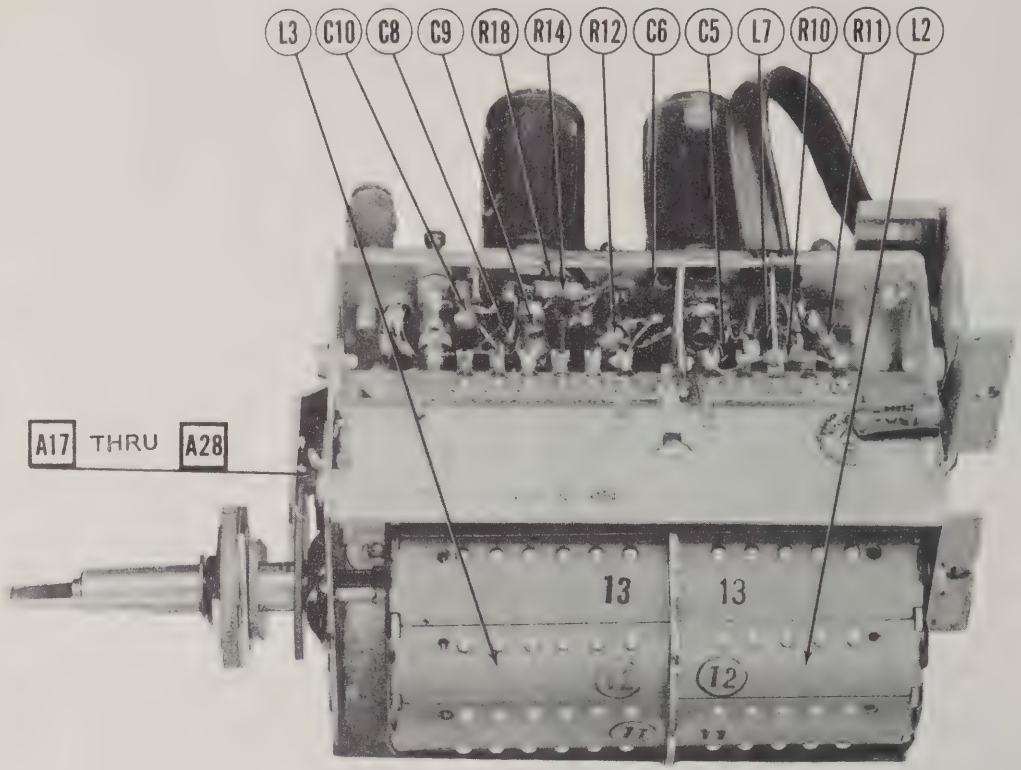
1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltage measured at 1,000 ohms.
2. Pin numbers are counted in a clockwise direction on bottom of socket.
3. Measured values are from socket pin to common negative unless otherwise stated.
4. Line voltage maintained at 117 volts for voltage readings.
5. Front panels controls set at minimum.
6. Where readings may vary according to the setting of the service controls, both minimum and maximum readings are given.



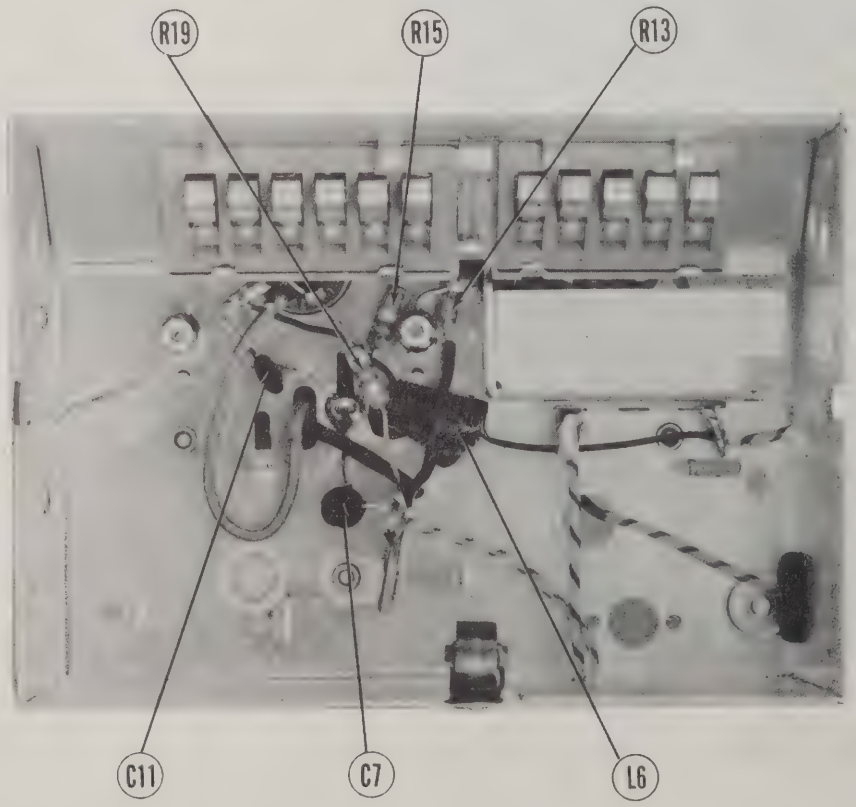
CHASSIS TOP VIEW



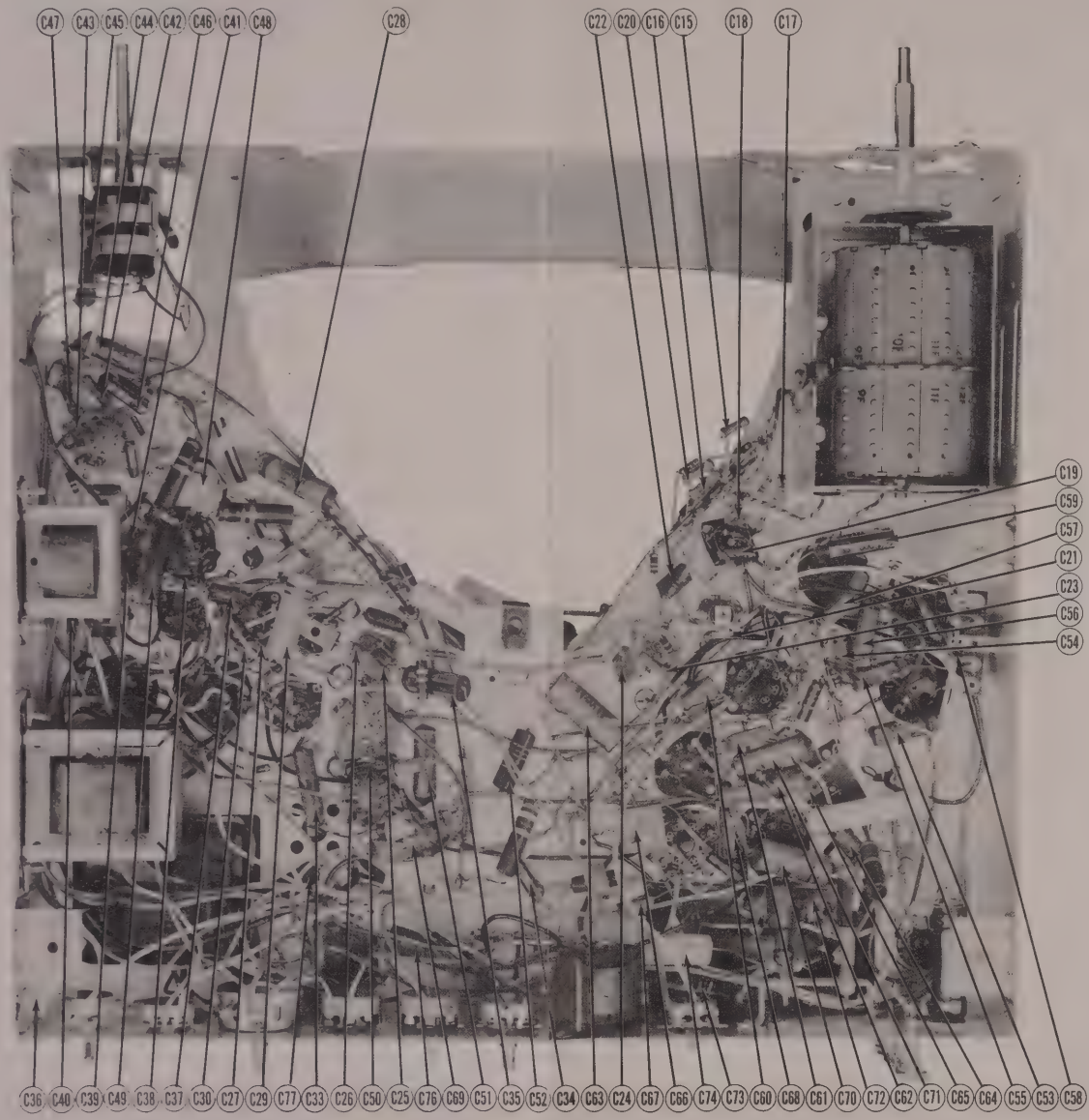
CHASSIS BOTTOM VIEW-TRANS., INDUCTOR AND ALIGNMENT IDENTIFICATION



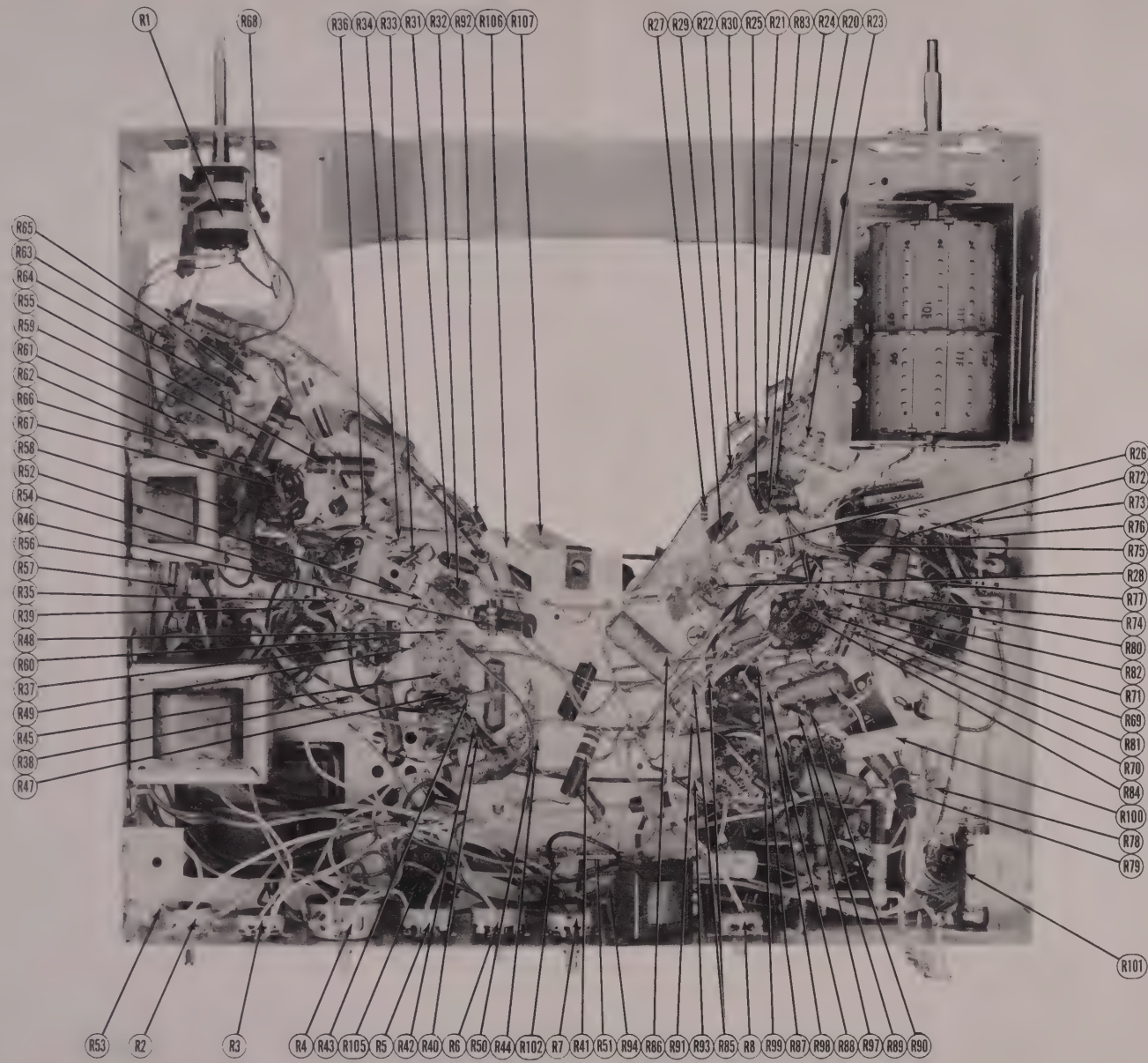
RF TUNER #470603, 470604, 470607



RF TUNER #470603, 470604, 470607

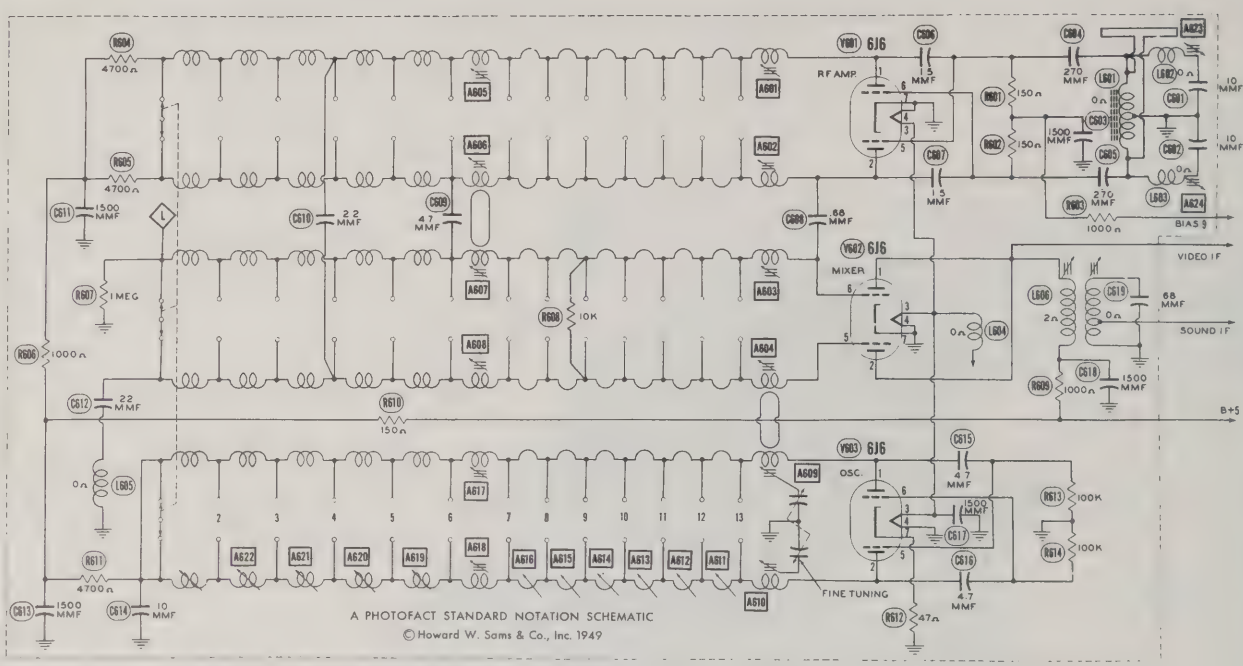


CHASSIS BOTTOM VIEW–CAPACITOR IDENTIFICATION



CHASSIS BOTTOM VIEW-RESISTOR IDENTIFICATION

CHASSIS–TOP VIEW



RF TUNER

PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	REPLACEMENT DATA: STANDARD REPLACEMENT	REPLACEMENT DATA: RMA BASE TYPE	
V601	R. F. Amp.	6J6	7BF	
V602	Mixer	6J6	7BF	
V603	Oscillator	6J6	7BF	

CAPACITORS

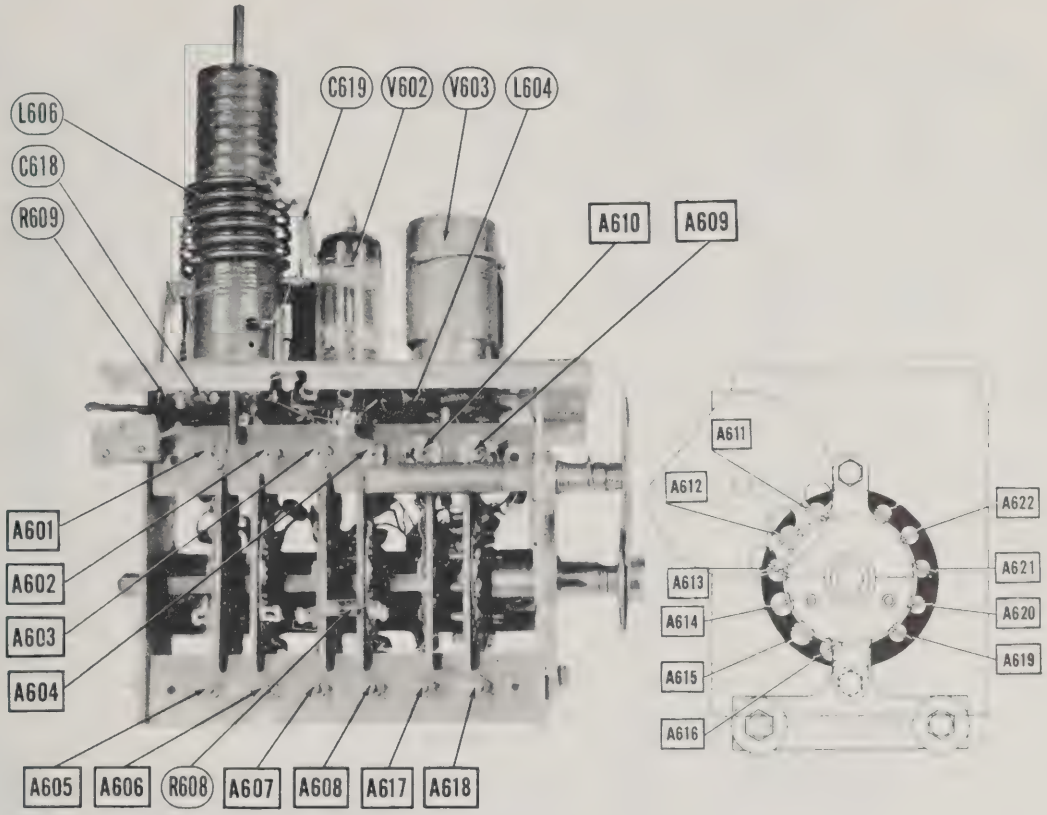
ITEM No.	RATING: CAP.	RATING: VOLT	IDENTIFICATION
C601	10		Fixed Trimmer
C602	10		Fixed Trimmer
C603	1500		RF Bypass
C604	270		RF Coupling
C605	270		RF Coupling
C606	1.5		Neutralizing
C607	1.5		Neutralizing
C608	.68		RF Coupling
C609	4.7		RF Coupling
C610	2.2		RF Coupling
C611	1500		RF Decoupling
C612	22		Fixed Trimmer
C613	1500		Osc. Decoupling
C614	10		Fixed Trimmer
C615	4.7		Osc. Feedback
C616	4.7		Osc. Feedback
C617	1500		Filament Bypass
C618	1500		Mixer Decoupling
C619	68		Fixed Trimmer

RESISTORS

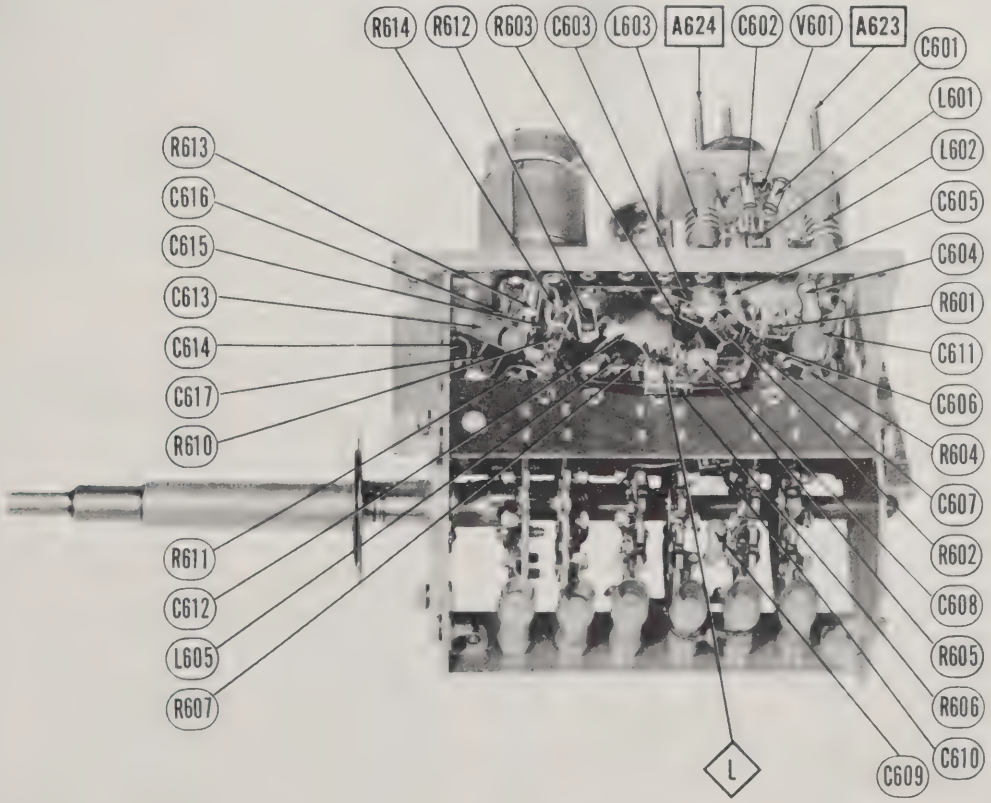
ITEM No.	RATING: RESISTANCE	RATING: WATTS	IDENTIFICATION
R601	150Ω	½	RF Grid
R602	150Ω	½	RF Grid
R603	1000Ω	½	Bias Filter
R604	4700Ω	½	RF Plate
R605	4700Ω	½	RF Plate
R606	1000Ω	½	RF Decoupling
R607	1 Meg.	½	Mixer Grid
R608	10KΩ	½	Mixer Grid Shunt
R609	1000Ω	½	Mixer Decpupling
R610	150Ω	½	Decoupling
R611	4700Ω	½	Osc. Plate
R612	47Ω	½	Osc. Cathode
R613	100KΩ	½	Osc. Grid
R614	100KΩ	½	Osc. Grid

COILS

ITEM No.	USE	DC RES.: PRI.	DC RES.: SEC.	
L601	Ant. Input	0Ω		
L602	Interference Trap	0Ω		
L603	Interference Trap	0Ω		
L604	Filament Choke	0Ω		
L605	Mixer Grid Trap	0Ω		
L606	1st. Video IF and Sound Trap	.2Ω	0Ω	



RF TUNER-LEFT SIDE



RF TUNER-RIGHT SIDE

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: EMERSON PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	NOTES
V1	RF Amp.	800535	6AG5	7BD	
V2	Converter	800536	6J6	7BF	
V3	Oscillator	800536	6J6	7BF	
V4	1st Video IF	800535	6AG5	7BD	
V5	2nd Video IF	800535	6AG5	7BD	
V6	3rd Video IF	800533	6AU6	7BK	
V7	Video Det. -AGC	800541	6AL5	6BT	
V8	1st Video Amp.	800533	6AU6	7BK	
	2nd Video Amp. -				
V9	Sync. Amp.	[illegible]	12AU7	9A	
	DC Rest. -Sync.				
V10	Sep.	800025	12AU7	9A	
V11	Sound IF Amp.	800533	6AU6	7BK	
V12	Limiter	800533	6AU6	7BK	
V13	Disc. -AF Amp.	800035	6T8	9E	
V14A	Audio Output	800270	6V6GT	7AC	
	Vert. Mult. &				
B	Output	800380	6SN7GT	8BD	Used in chassis #120113, B, BC, C
V15	Vert. Osc. & Disch.	800380	6SN7GT	8BD	Used in chassis #120110, B, BC, C
V16	Vert. Output	800016	6K6GT	7B	Used in chassis #120110, B, BC, C
	Hor. Phase Inv. -				
	DC Amp.	800380	6SN7GT	8BD	
V18	Hor. AFC	800541	6AL5	6BT	
	Hor. Osc. -Hor.				
	Disch	800380	6SN7GT	8BD	
V19	Hor Output	[illegible]	6BQ6G	5BT	
V20	Damper	[illegible]	6W4GT	4CG	
V21	HV Rect	[illegible]	1B3GT	3C	
V22	LV Rect.	[illegible]	5U4G	5T	
V23A	Picture Tube	[illegible]	10BP4	12D	Used in chassis #120110, B, BC, C, 120110E
B	Picture Tube	810003	12LP4	12D	Used in chassis #120113, B, BC, C
C	Picture Tube		12QP4	12D	Used in chassis #120113, B, BC, C

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: EMERSON PART No.	AEROVOX PART No.	CENTRALAB PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	40	450	925161	AFH88IJSD			D10229	▲ Filter
B	40	450						■ Filter
C	10	450						▲ Decoupling
D	25	50						Output Cathode Bypass
C2A	40	450	925166 ♦	AFH882J20C			D10231	▲ Filter
B	40	450						■ Filter
C	10	450						▲ Decoupling
D	100	100						Vert. Output Cathode Bypass
C3A	10	450	925165	AFB2J1616F			D10230	▲ Decoupling
B	80	250						■ Decoupling
C	80	250						▲ Filter
C4	5			SI5DNPO	D2-4.7	NPOK-5		Fixed Trimmer *
C5	1000			GP1000M	D6-102	GP2L-001		RF Filament Bypass
C6	1000			GP1000M	D6-102	GP2L-001		RF Decoupling
C7	1000			GP1000M	D6-102	GP2L-001	29C4	RF Bypass
C8	100			SI100N750	DN-100	N750L-100		RF Coupling
C9	30			SI20KNPO	D2-20	NPOK-20		Osc. Grid Cap.
C10	10			SI10DN750	DN-10	N750K-10		Fixed Trimmer
C11	1000			GP1000M	D6-102	GP2L-001	29C4	Conv. Filament Bypass
C12	100			GP100E	D6-101	GP1K-100		Conv. Plate Decoupling
C13	10	200		1469-00001	D2-10	NPOK-10	MS-41	Fixed Trimmer
C14	300			GP300M	D6-301	GP2K-300		IF Coupling
C15	1500		928006	GP1500M	D6-152	GP2L-0015	1FM-215	RF Bypass
C16	1500		928006	GP1500M	D6-152	GP2L-0015	1FM-215	RF Bypass
C17	1500		928006	GP1500M	D6-152	GP2L-0015	1FM-215	AGC Filter
C18	5000		928109	BPD-5	D6-502	811-005	39C1	1st V. IF Cathode Bypass
C19	1500		928006	GP1500M	D6-152	GP2L-0015	1FM-215	1st V. IF Decoupling
C20	1500		928006	GP1500M	D6-152	GP2L-0015	1FM-215	AGC Filter
C21	75			GP75K	D6-750	GP1K-75		Fixed Trimmer
C22	270	500	910015	1468-00025	D6-271	GP2K-270	1FM-325	IF Coupling
C23	1500		928006	GP1500M	D6-152	GP2L-0015	1FM-215	2nd V. IF Decoupling
C24	270	500	910015	1468-00025	D6-271	GP2K-270	1FM-325	IF Coupling
C25	1500		928006	GP1500M	D6-152	GP2L-0015	1FM-215	3rd V. IF Cathode Bypass
C26	1500		928006	GP1500M	D6-152	GP2L-0015	1FM-215	3rd V. IF Decoupling
C27	47		910290	GP47K	D6-470	GP1K-47	1FM-45	IF Coupling
C28	.1	200	923067	P288-1			TM-1	AGC Filter
C29	.056	400	923063	P488-05			TM-15	Video Coupling
C30	1500		928006	GP1500M	D6-152	GP2L-0015	1FM-215	DAGC Decoupling
C31	220	500	910028	1468-00025	D6-221	GP2K-220	1FM-325	1st V. Amp. Cathode Bypass
C32	150	500	910027	1468-00015	D6-152	GP2K-150	1FM-315	1st V. Amp. Cathode Bypass
C33	.047	400	923062	P488-047			TM-15	Video Coupling
C34	.01	400	923061	P488-01	D6-103	811-01	TM-11	Video Coupling ¶
C35	.1	400	923064	P488-1			TM-1	Video Coupling
C36	.1	400	923064	P488-1			TM-1	Pic. Tube Cathode Bypass
C37	10	500	910130	1468-00001	D6-100	GP1K-10	MS-41	S. IF Coupling
C38	1500		928006	GP1500M	D6-152	GP2L-0015	1FM-215	1st S. IF Decoupling
C39	1500		928006	GP1500M	D6-153	GP2L-0015	1FM-215	Limiter Decoupling
C40	68	500	910031	1468-000075	D6-680	GP1K-68	1FM-475	Limiter Grid Filter
C41	1500		928006	GP1500M	D6-152	GP2L-0015	1FM-215	Limiter Screen Bypass
C42	1500		928006	GP1500M	D6-152	GP2L-0015	1FM-215	RF Bypass *
C43	110		910010	GP120M	D6-121	GP2K-120	1FM-31	RF Bypass
C44	.001	500	923079	P688-001	D6-102	GP2L-001	TM-21	De-emphasis
C45	.01	400	923061	P488-01	D6-103	811-01	TM-11	Audio Coupling
C46	.01	400	923061	P488-01	D6-103	811-01	TM-11	Audio Coupling
C47	1500		928006	GP1500M	D6-152	GP2L-0015	1FM-215	Disc.-AF Filament Bypass
C48	.047	400	923062	P488-047			TM-15	Audio Coupling
C49	.005	400	923078	P688-005	D6-502	811-005	TM-25	Output Plate Bypass
C50	.01	400	923061	P488-01	D6-103	811-01	TM-11	Sync. Coupling
C51	.05	200	923062	P288-05			TM-15	Sync. Coupling

CAPACITORS (CONT.)

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: EMERSON PART No.	AEROVOX PART No.	CENTRALAB PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C52	.047	400	923062	P488-047			TM-15	Sync. Coupling
C53	.002	600	923068	P688-002	D6-202	GP2M-002	TM-22	Integrator Net.
C54	.002	600	923068	P688-002	D6-202	GP2M-002	TM-22	Integrator Net. †
C55	.001	600	923079	P688-001	D6-102	GP2L-001	TM-21	Integrator Net. †
C56	.005	600	923078	P688-005	D6-502	811-005	TM-25	Vert. MV Grid Cap. †
C57	1000	500	910027	1467-001	D6-102	GP2L-001	1FM-21	Vert. MV Feedback
C58	.1	300	922014	P288-1			TM-1	Vert. MV Cath. Bypass
C59	.033	600	922034	P688-033				Vert. Discharge †
C60	1000	500	910027	1467-001	D6-102	GP2L-001	1FM-21	Hor. Sync. Coupling
C61	1000	500	910027	1467-001	D6-102	GP2L-001	1FM-21	Hor. Sync. Coupling
C62	.05	400	923068	P488 05			TM-15	AFC Filter
C63	.35	300	923080	P488-35			TC-2	AFC Feedback
C64	.005	600	923077	P688-005	D6-502	811-005	TM-25	Hor. Feedback
C65	110	500	910010	1468-0001	D6-121	GP2K-120	1FM-31	Voltage Divider
C66	780	500	910023	1464-00075	D6-751	GP2K-750		Hor. Osc. Grid Cap. †
C67	470	500	910017	1469-0005	D6-471	GP2K-470	MS-35	Hor. Discharge
C68	.001	600	923079	P688-001	D6-102	GP2L-001	TM-21	Hor. Sweep Coupling
C69	.1	300	923067	P288-1			TM-1	Bias Filter
C70	.05	600	923073	P688-05			TM-15	Hor. Output Screen Bypass
C71	.1	200	923067	P288-1			TM-1	Hor. Output Cath. Bypass
C72	.05	400	923062	P488-05			TM-15	Fixed Trimmer
C73	.047	600	923073	P688-047			TM-15	Damper Filter
C74	.033	600	923074	P688-033				Damper Filter
C75	500	10000	923003	HV-500	TV1-501			HV Filter
C76	.1	400	923064	P488-1			TM-1	Acc. Anode Bypass
C77	.047	400	922101	P488-047			TM-15	Line Filter
C78	.01	800	923075	P688-01	D6-103	811-01	TM-11	Vert. Sync. Coupling #
C79	.25	400	923066	P488-25			TC-2	Vert. Osc. Decoupling #
C80	.05	600	923073	P688-033			TM-13	Vert. Sweep Coupling #

* Not used in all models.
† Chassis 120110B and 120113B uses .005MFD in this application.
‡ Chassis 120110B and 120113B uses .003MFD in this application.
§ Chassis 120110B and 120113B uses .05MFD in this application.
♦ Chassis 120110B and 120113B uses MFGR'S Part No. 925161 in this application.
Used only in chassis 120110B and 120113C.
¶ Some models use .05MFD in this application.

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: EMERSON PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	INSTALLATION NOTES
R1A	1500Ω	2	390131			390131	Contrast control-Wire Wound
B	1 Meg.	½					Volume control and switch
R2A	100KΩ	½	390132	Q11-128	M-49-S	AN-40	Brightness control
B	Shaft		Not Req.	Not Req.	Not Req.	AK-1	Attach to R2A per instructions
R2A	100KΩ	½	390075				Brightness control-See Note 1
B	50KΩ	½					Horiz. hold control-See Note 1
R3	100KΩ	½	390132	Q11-128	M-49-S		Vert. hold control-See Note 2
R4	1500Ω	4	390106		10-1500		Focus control-Wire Wound
R5A	3 Meg.	½	390138	Q11-140	390138	AN-84	Height control-See Note 3
B	Shaft		Not Req.	Not Req.	Not Req.	AK-1	Attach to R5A per instructions
R6	3000Ω	2	390135	W-3000	43-3000	V-133	Vert. linearity control-Wire Wound-See Note 4
R7A	20KΩ	½	390102	Q11-119	M-36-S	AN-22	Horiz. drive control
B	Shaft		Not Req.	Not Req.	Not Req.	AK-4	Attach to R7A per instructions
R8A	50KΩ	½	390133	Q11-123	M-44-S	AN-31	Horiz. hold control-See Note 5
B	Shaft		Not Req.	Not Req.	Not Req.	AK-1	Attach to R8A per instructions
R9	20Ω	2	390107				Horiz. centering control-See Note 6

Note 1. Not used in all chassis 120110C and 120113C , used as front panel control in chassis 120110B and 120113B.
Note 2. Chassis 120110B and 120113B use 1 Meg. control part No. 390112.
Note 3. Chassis 120110B and 120113B use 2 Meg. control part No. 390038 and is used as front panel control.
Note 4. Chassis 120110B and 120113B use 5000Ω control part No. 390039.
Note 5. Not used in chassis 120110B and 120113B and all versions of 120110C and 120113C.
Note 6. Used only in chassis 120110B and 120113B when chassis is not equipped with wobble plate and centering lever.

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: EMERSON PART No.	IRC PART No.	IDENTIFICATION CODES ALL RESISTORS ARE ± 10% UNLESS OTHERWISE STATED.
R10	3900Ω	½		BTS-3900	Ant. Coil Shunt
R11	47KΩ	½			AGC Network
R12	10KΩ	½			RF Plate Coil Shunt
R13	2200Ω	½		BTS-2200	RF Decoupling
R14	4700Ω	½			Conv. Grid
R15	220KΩ	½			Conv. Grid
R16	18KΩ	½			1st Video IF Transformer Shunt
R17	10KΩ	½			Conv. Plate Decoupling
R18	10KΩ	½			Osc. Grid
R19	4700Ω	½			Osc. Plate
R20	1000Ω	½	340492	BTS-1000	Decoupling
R21	1000Ω	½	340492	BTS-1000	AGC Network
R22	1000Ω	½	340492	BTS-1000	AGC Network
R23	5600Ω	½	340672	BTS-5600	1st Video IF Grid-See Note 7
R24	68Ω	½	340212		1st Video IF Cathode
R25	1000Ω	½	340492	BTS-1000	1st Video IF Decoupling
R26	10KΩ	½	340732	BTS-10K	2nd Video IF Transformer Shunt
R27	4700Ω	½	340652		2nd Video IF Grid
R28	33Ω	½	340132		2nd Video IF Cathode
R29	1000Ω	½	340492	BTS-1000	2nd Video IF Decoupling
R30	1000Ω	½	340492	BTS-1000	AGC Network
R31	3900Ω	½	340632	BTS-3900	RF Choke Coil Shunt
R32	150Ω	½	340292		3rd Video IF Cathode
R33	1000Ω	½	340492	BTS-1000	3rd Video IF Decoupling
R34	1 Meg.	½	341212	BTS-1 Meg.	AGC Network
R35	2.2 Meg.	½	341292	BTS-2.2 Meg.	AGC Rect. Diode Load
R36	4700Ω	½	340652	BTS-4700	Video Det. Diode Load
R37	1 Meg.	½	341212	BTS-1 Meg.	1st Video Amp. Grid
R38	1500Ω 5%	½	330532	BTS-1500-5%	1st Video Amp. Plate

RESISTORS (CONT.)

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: EMERSON PART No.	IRC PART No.	IDENTIFICATION CODES
R39	68KΩ	½	340932	BTS-68K	Delayed AGC Network
R40	1 Meg.	½	341212	BTS-1 Meg.	2nd Video Amp. Grid
R41	3900Ω	2	370632	BT-2-3900	2nd Video Amp. Plate
R42	180KΩ	½	341032	BTS-180K	Sync. Amp. Grid
R43	10KΩ	1	370732	BTA-10K	Sync. Amp. Plate
R44	1000Ω	½	340492	BTS-1000	Sync. Amp. Plate
R45	47KΩ	½	340892	BTS-47K	Voltage Divider
R46	22KΩ	1	370812	BTA-22K	Sync. Sep. Plate
R47	1 Meg.	½	341212	BTS-1 Meg.	Sync. Sep. Grid
R48	270KΩ	½	341072	BTS-270K	DC Rest. Load
R49	22KΩ	½	340812	BTS-22K	Voltage Divider
R50	2200Ω	½	340572	BTS-2200	Isolation
R51	1 Meg.	½	341212	BTS-1 Meg.	Picture Tube Grid
R52	47KΩ	½	340892	BTS-47K	Voltage Divider
R53	4700Ω	½	340652	BTS-4700	Voltage Divider
R54	120Ω	½	340272		Sound IF Cathode
R55	10KΩ	2	397014		Sound IF Decoupling
R56	100KΩ	½	340972	BTS-100K	Limiter Grid
R57	5000Ω	2	397110	BT-2-4700	Limiter Decoupling
R58	4700Ω	½	340652	BTS-4700	Voltage Divider
R59	10KΩ	2	397014		Limiter Screen
R60	120Ω	½	340272		Voltage Divider
R61	100KΩ	½	330972	BTS-100K	Disc. Diode Load
R62	100KΩ	½	340972	BTS-100K	Disc. Diode Load
R63	68KΩ	½	340932	BTS-68K	De-emphasis
R64	15 Meg.	½	351492	BTS-15 Meg.	AF Amp. Grid
R65	470KΩ	½	341132	BTS-470K	AF Amp. Plate
R66	470KΩ	½	341132	BTS-470K	Output Grid
R67	330Ω	½	340372	BW-½-330	Output Cathode
R68	1000Ω	1	370492	BTA-1000	Feedback
R69	10KΩ	½	340732	BTS-10K	Integrator Network-See Note 8
R70	22KΩ	½	340812	BTS-22K	Integrator Network
R71	39KΩ	½	340872	BTS-39K	Integrator Network-See Note 9
R72	47KΩ	½	340892	BTS-47K	Vert. MV Grid-See Note 10
R73	68KΩ	½	340932	BTS-68K	Vert. MV Cathode-See Note 11
R74	100KΩ	½	340972	BTS-100K	Vert. MV Feedback-See Note 11
R75	2200Ω	½	340572	BTS-2200	Vert. Peaking-See Note 12
R76	5.6 Meg.	½	331392	BTS-5.6 Meg.	Voltage Divider-See Note 11
R77	4700Ω	1	370652	BTA-4700	Vert. MV Cathode-See Note 13
R78	3300Ω	1	370612	BTA-3300	Vert. MV Plate Decoupling-See Note 14
R79	8200Ω	2		BT-2-8200	Decoupling-See Note 11
R80	1 Meg.	½	341212	BTS-1 Meg.	Horiz. Phase Inv. Grid
R81	1200Ω	½	330512	BTS-1200	Horiz. Phase Inv. Cathode-See Note 15
R82	47000Ω 5%	½	330652	BTS-4700-5%	Horiz. Phase Inv. Plate
R83	32000Ω 5%	½	330632	BTS-3200-5%	Horiz. Phase Inv. Plate
R84	1000Ω	½	330492	BTS-1000	DC Amp. Cathode
R85	100KΩ	2	397029	BT-2-100K	DC Amp. Plate-See Note 15
R86	43KΩ 5%	½	340892		Phase Shifter
R87	220KΩ	½	341052	BTS-220K	Horiz. AFC Det. Load
R88	220KΩ	½	341052	BTS-220K	Horiz. AFC Det. Load
R89	100KΩ 5%	½	330972	BTS-100K-5%	Horiz. AFC Det. Load
R90	100KΩ 5%	½	330972	BTS-100K-5%	Horiz. AFC Det. Load
R91	47KΩ	½	340892	BTS-47K	Horiz. Osc. Grid
R92	4700Ω	1	370652	BTA-4700	Horiz. Osc. Plate Decoupling
R93	470KΩ 5%	½	331132	BTS-470K-5%	Horiz. Discharge Plate
R94	18KΩ	½	340792	BTS-18K	Horiz. Peaking
R95	470KΩ	1	371132	BTA-470K	Feedback Network
R96	470KΩ	1	341132	BTA-470K	Feedback Network
R97	270KΩ	½	341072	BTS-270K	Horiz. Output Grid
R98	470KΩ	½	341132	BTS-470K	Horiz. Output Grid
R99	100Ω	1	370252	BW-1-100	Horiz. Output Cathode
R100	10KΩ	10	397044	AB-10K	Horiz. Output Screen-Wire Wound
R101	7500Ω	25	394007		Damper Filter-Wire Wound
R102	470KΩ	½	341132	BTS-470K	Acc. Anode Load
R103	3.3Ω	½	394066		HV Rect. Filament-Wire Wound
R104	1 Meg.	½	371212		HV Filter
R105	10Ω	½	340012	BW-½-10	Horiz. Centering Network-See Note 11
R106	4000Ω	10	394078	AB-4000	Bleeder-Wire Wound
R107	8000Ω	10	394078	AB-8000	Voltage Divider-Wire Wound
R108	100KΩ	1	370972	BTA-100K	Vert. Osc. Plate Decoupling-See Note 16
R109	470KΩ	½	341132	BTS-470K	Vert. Osc. Plate Decoupling-See Note 16
R110	33KΩ	1	370852	BTA-33K	2nd Video Amp. Plate Decoupling-See Note 16
R111	4.7 Meg.	½	341372	BTS-4.7 Meg.	Vert. Output Grid-See Note 16

Note 7. Chassis 120110B and 120113B use 10KΩ resistor in this application.
Note 8. Chassis 120110B and 120113B use 22KΩ resistor in this application.
Note 9. Chassis 120110B and 120113B use 4700Ω resistor in this application.
Note 10. Chassis 120110B and 120113B use 1.5 Meg. resistor in this application.
Note 11. Not used in chassis 120110B and 120113B.
Note 12. Chassis 120110B and 120113B use 8200Ω resistor in this application.
Note 13. Chassis 120110B and 120113B use 270Ω resistor in this application.
Note 14. Chassis 120110B and 120113B use 10KΩ resistor in this application.
Note 15. Some models use two resistors in parallel to obtain required resistance and wattage.
Note 16. Used in chassis 120110B and 120113B only.

TRANSFORMER (POWER)

ITEM No.	RATING: PRI.	RATING: SEC. 1	RATING: SEC. 2	RATING: SEC. 3	REPLACEMENT DATA: EMERSON PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.
T1	117VAC ① 2A	730VCT .230ADC	6.3VAC ① 4.5A	6.3VAC ① 4.5A	730018	P-8159 ① and P-3064 ②	P-3066	

① Drill new mounting holes.
② Mount under chassis, and use for SEC. #4.

EMERSON MODELS 614, B, BC, C, 637, B, BC, C, 644B, BC, C, 647B, BC, C, 648B

PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (SWEEP CIRCUITS)

ITEM No.	RATING		REPLACEMENT DATA				NOTES
	DC RESISTANCE		EMERSON	STANCOR	MERIT	CHICAGO	
	PRI.	SEC.	PART No.	PART No.	PART No.	PART No.	
T2	220Ω Tap ⓐ 100Ω	7.9Ω Tap ⓐ .6Ω SEC. 2 0Ω	738028	A-8117	HVO-1	TFB-1	Hor. Output Trans.
T3	1000Ω Tap ⓐ 12Ω		738029 Alt. Pt. # 738026, 738026A, 738027	A-8112	A-3037	TSO-5 ①	Vert. Output Transformer
T4A	14Ω		708130	DY-1	MD-3		Hor. Deflection Coil
B	63Ω		Alt. Pt. #708130R				Vert. Deflection Coil
T5	445Ω		708025				Focus Coil

① Drill one new mounting hole.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		EMERSON	STANCOR	MERIT	CHICAGO	
	PRI.	SEC.	PRI.	SEC.	PART No.	PART No.	PART No.	PART No.	
T6	5.8KΩ	3.6Ω	320Ω	.6Ω	734051	A-3849	A-3019	RO-9	

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			NOTES
	FIELD RES.	V. C. IMP.	EMERSON	JENSEN	QUAM	
			PART No.	PART No.	PART No.	
SP1	PM	3.6Ω	180047	ST-108 MOD. P6-X	6A1	
	CONE DIA.	V. C. DIA.				
SP2	5 7/8"	9/16"				

FILTER CHOKE

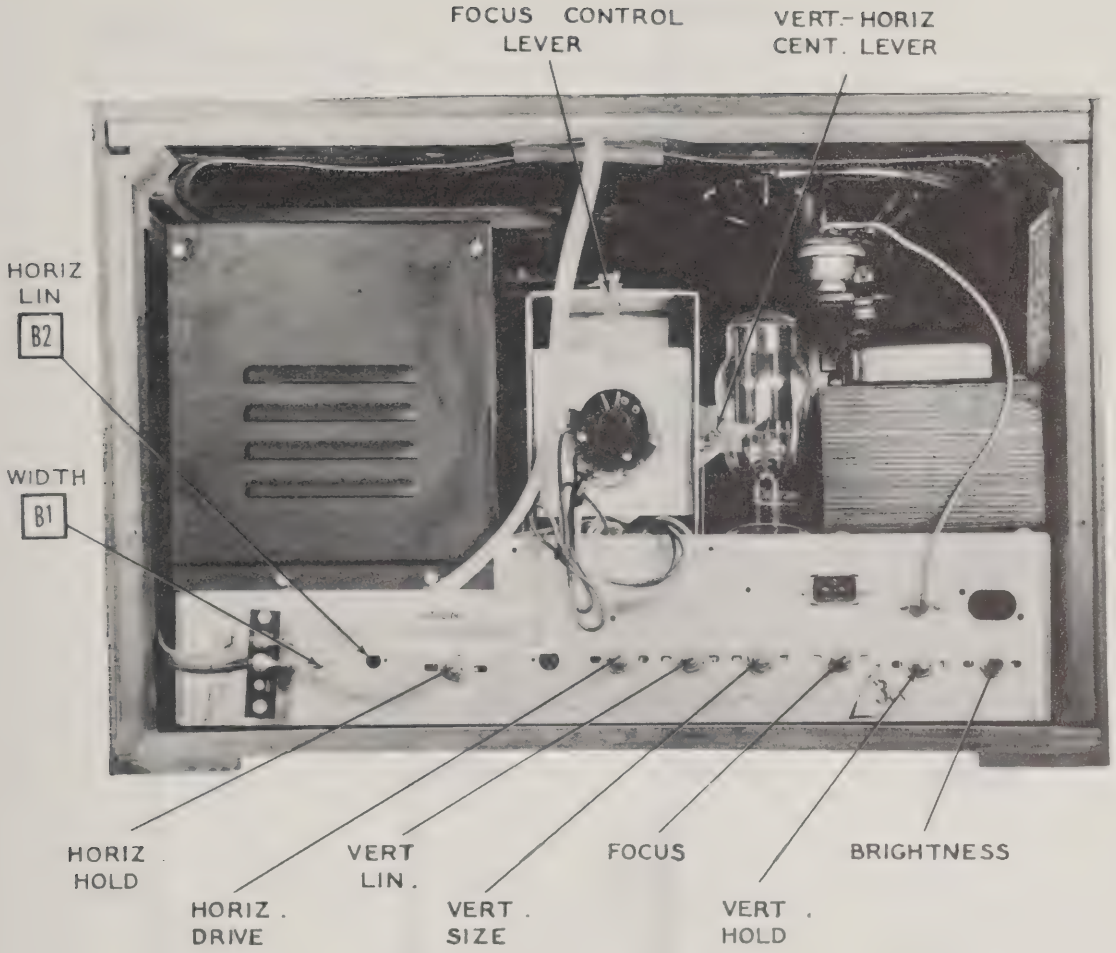
ITEM No.	RATINGS			REPLACEMENT DATA				INSTALLATION NOTES
	TOTAL DIRECT CURRENT	D. C. RESISTANCE	INDUCTANCE (0 CURRENT 1000 ~)	EMERSON PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
L1	.230A	110Ω	5.2 Henries	737011		C-2974		

COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA		NOTES
		PRI.	SEC.	EMERSON PART No.	MEISSNER PART No.	
L2	Ant. Coil	0Ω	0Ω			Part of tuner #470607.
L3	RF Plate, Mixer Grid, Osc. Coils	0Ω	0Ω			Part of tuner #470607.
L4	1st Video IF Primary	2Ω		720056		
L5	1st Video IF Secondary	2Ω				Part of L4
L6	Fil. Choke	0Ω				
L7	Fil. Choke	0Ω				
L8	2nd Video IF	.4Ω	.1Ω	720042		
L9	3rd Video IF	.2Ω		720109		
L10	RF Choke	3Ω		705014		20 microhenries
L11	4th Video IF	.6Ω	.6Ω	720057		
L12	Peaking	6Ω		708096	19-1920	75 microhenries
L13	Peaking	3.8Ω		708097		45 microhenries
L14	Peaking	9.5Ω		708095	19-1921	180 microhenries
L15	Peaking	9.5Ω		708095	19-1921	180 microhenries
L16	Sound IF	2.1Ω	2.1Ω	720081		
L17	Disc. Trans.	1.7Ω	.9Ω	708018		Alternate Part #708017.
L18	RF Choke	.1Ω				
L19	RF Choke	50Ω		705009		3 millihenries
L20	Horiz. Osc. Trans.	3.2Ω	1.2Ω	738008		
L21	Width	.6Ω		708082		
L22	Horiz. Lin.	36Ω		708003		

MISCELLANEOUS

ITEM No.	PART NAME	EMERSON PART No.	NOTES
M1A	RF Tuner	470233	
B	RF Tuner	470452	
C	RF Tuner	470604	
D	RF Tuner	470605	
M2	Ion Trap	708084	
M3A	Fuse	808050	.25A 250V
B	Fuse	808170	.25A 250V



CABINET-REAR VIEW

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Turn the set on and tune in a TV station, preferably a test pattern.

Turn the horizontal hold control to synchronize the picture horizontally.

Turn the horizontal drive control clockwise as far as possible without crowding part of the picture.

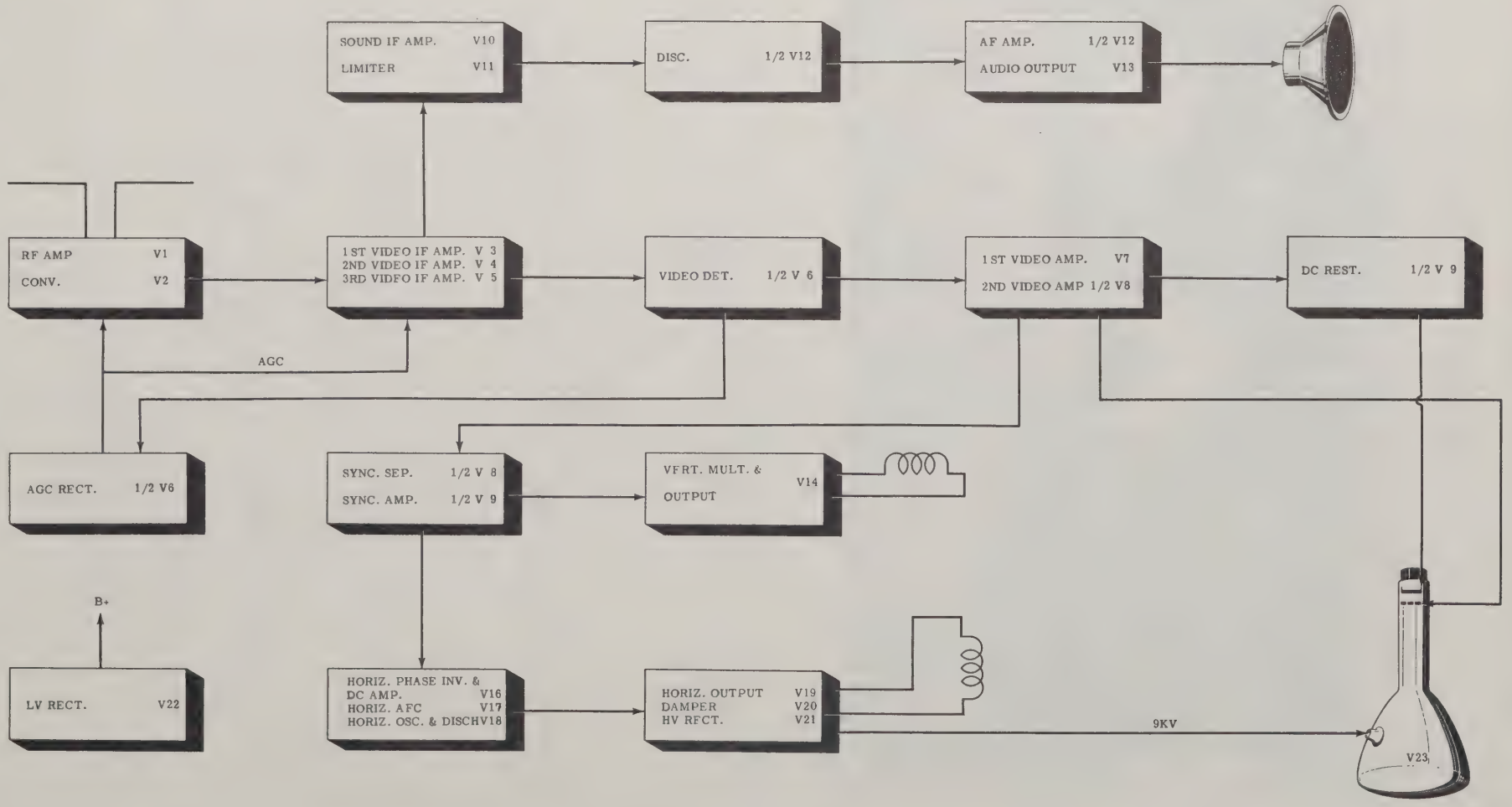
Adjust the horizontal size slug (B1) until the picture is of proper width.

Adjust the horizontal linearity slug (B2) until the picture is symmetrical from left to right.

Slight readjustment of the horizontal drive control may be necessary.

DISASSEMBLY INSTRUCTIONS

1. Remove six phillips head screws holding rear cover.
2. Remove four push-on type control knobs.
3. Disconnect built-in antenna and speaker plug.
4. Remove five 7/16" hex head bolts holding chassis. Remove chassis.
5. Remove two 5/16" hex nuts holding speaker. Remove speaker.



BLOCK DIAGRAM

AIRCASTLE
MODELS 6050, 6053

AIRCASTLE
MODELS 6050, 6053

AIRCASTLE MODEL 6053

TRADE NAME	Aircastle, Models 6050, 6053
SUPPLIER	Spiegel Inc., 1061 W. 35th St., Chicago, Illinois
TYPE SET	AC Operated Combination Phono-Radio Superheterodyne Receiver with Loop Antenna
TUBES (FIVE)	Types 12SA7GT Converter, 12SK7GT IF Amp., 12SQ7GT DET-AVC-AF, 50L6GT Power Output, 35Z5GT Rectifier
POWER SUPPLY	110-125 Volts AC — RATING .30 Amp. at 117 Volts AC
TUNING RANGE—BROADCAST	540-1720KC — RECORD CHANGER-- WEBSTER MODEL 346

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set dial pointer turn tuning gang fully closed and set the pointer 1 7/16 inches to the left of the right hand end of the dial backplate.

Use isolation transformer if available. If not connect a .1MFD capacitor in series with low side of signal generator and B-.

Loop should be maintained in same relative position to chassis as when receiver is in cabinet.

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.1MFD	High side to stator on rear section of tuning gang. Low side to B-.	455KC (400 ∿ Mod.)	Tuning gang fully open	Across voice coil	A1, A2, A3, A4	Adjust for maximum output. If isolation transformer is not used, reduce dummy antenna to .001MFD to reduce hum modulation.
2.	.1MFD	"	1720KC	"	"	A5	"
3.		Loop	1400KC	Tune for max. output.	"	A6	Replace the chassis in the cabinet and connect the loop and phono motor. Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.

HOWARD W. SAMS & CO., INC. • Indianapolis Indiana

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PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: AIRCASTLE PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
V1	Converter	12SA7GT	12SA7GT	8AD	
V2	IF Amp.	12SK7GT	12SK7GT	8N	
V3	DET.-AVC-AF	12SQ7GT	12SQ7GT	8Q	
V4	Power Output	50L6GT	50L6GT	7AC	
V5	Rectifier	35Z5GT	35Z5GT	6AD	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: AIRCASTLE PART No.	AEROVOX PART No.	CENTRALAB PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	40	150	EC-14	PRSA888D			TA-304	Filter-Blue
B	40	150						Filter-Red
C	20	150						Filter-Yellow
C2	.05	200	PC-2	P288-06			TM-15	AVC Filter
C3	.1	400	PC-8	P488-1			73P52	Line Isolation
C4	50	500	MC-4	1468-00005	D6-500	GP1K-50	1FM-45	Osc. Grid Cap.
C5	.25	400	PC-4	P488-25			TC-2	Bias Filter
C6	100	500	MC-2	1468-0001	D6-101	GP1K-100	1FM-31	Diode RF Filter
C7	100	500	MC-5	1468-0001	D6-101	GP1K-100	1FM-31	Tone Compensation
C8	.05	400	PC-5	P488-05			TM-15	Phono Isolation
C9	10000	300	PC-7	1467-01	D6-103	821-01	1FM-11	Audio Coupling
C10	100		MC-5	GP100M	D6-101	GP1K-100	1FM-31	AF Amp. Plate Bypass
C11	10000	300	PC-7	1467-01	D6-103	821-01	1FM-11	Audio Coupling
C12	10000	300	PC-7	1467-01	D6-103	821-01	1FM-11	Output Plate Bypass
C13	.05	400	PC-5	P488-05			TM-15	Tone Compensation
C14	.05	400	PC-5	P488-05			TM-15	Line Filter

CONTROLS

ITEM No.	RATING: RESIST-ANCE	RATING: WATTS	REPLACEMENT DATA: AIRCASTLE PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	INSTALLATION NOTES
R1A	1 Meg.	½	VC-4	Q13-137	AM-63-Z	BSK-70-S	Volume control
B	Shaft		Not Req.	Not Req.	KSS-3	Not Req.	Attach to R1A per instructions
C	Switch		Not Req.	76-1	SW-A	Not Req.	Attach to R1A per instructions

RESISTORS

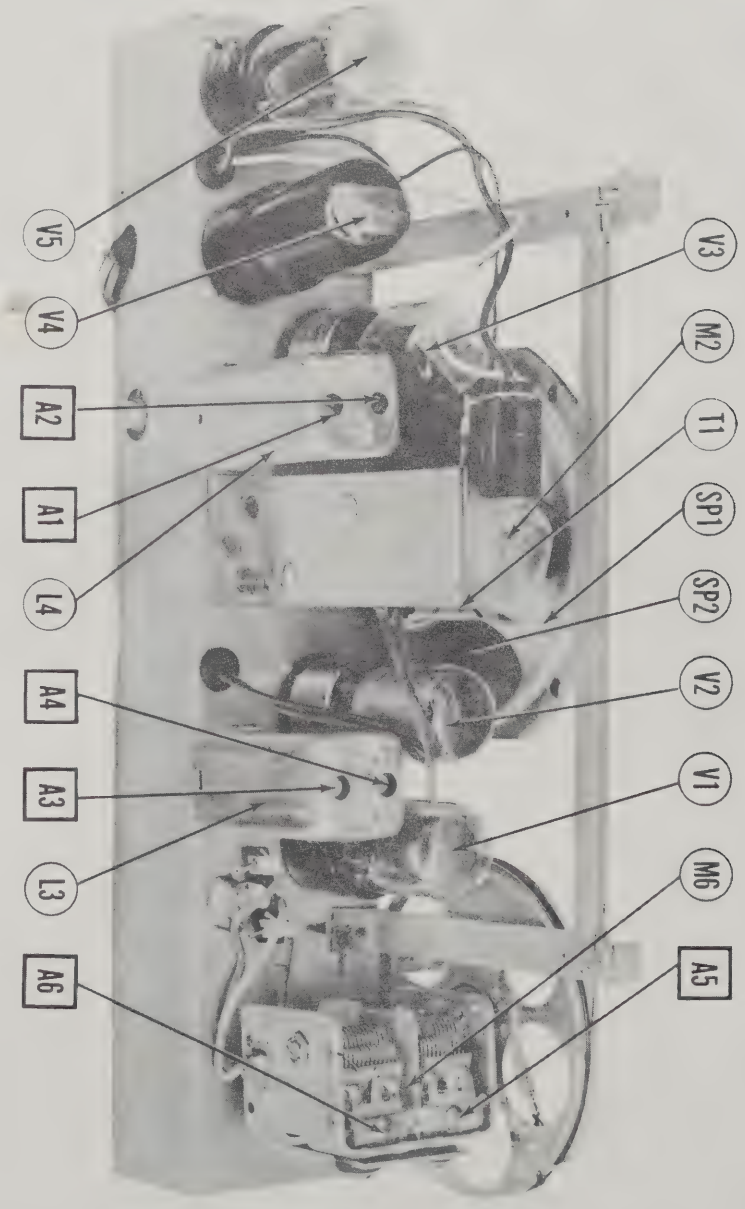
ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: AIRCASTLE PART No.	IRC PART No.	IDENTIFICATION CODES
R2	22KΩ	½	IR-9	BTS-22K	Osc. Grid
R3	47KΩ	½	IR-10	BTS-47K	Bias Network
R4	3.3 Meg.	½	IR-23	BTS-3.3 Meg.	AVC Network
R5	47KΩ	½	IR-10	BTS-47K	Diode Filter
R6	2.2 Meg.	½	IR-13	BTS-2.2 Meg.	AF Amp. Grid
R7	470KΩ	½	IR-11	BTS-470K	AF Amp. Plate
R8	470KΩ	½	IR-11	BTS-470K	Output Grid
R9	2200Ω	½	IR-15	BTS-2200	Tone Compensation
R10	470Ω	½	IR-1	BTS-470	Filter
R11	1000Ω	1	IR-42	BW-1-1000	Filter
R12	33Ω	½	IR-17		Rect. Ballast
R13	33Ω	½	IR-17		Surge Limiter
R14	220KΩ	½	IR-20	BTS-220K	Tone Compensation-See Note
R15	1 Meg.	½	IR-12	BTS-1 Meg.	Tone Compensation
R16	220KΩ	½	IR-20	BTS-220K	Isolation

Note. Not used in all models.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: AIRCASTLE PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	INSTALLATION NOTES
T1	2.8KΩ	3.5Ω	226Ω	.7Ω	Part of SP1	A-3330 ①	A-3031 ①	RO-3 ①	① Bend tabs down and mount on original bracket.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA AIRCASTLE PART No.	JENSEN PART No.	QUAM PART No.	INSTALLATION NOTES
	FIELD	V. C. IMP.		ST-105		
SP1	PM	3.5Ω	SPK-12	MOD. P5-X	5A1 ②	② Remount output transformer.
	CONE DIA.	V. C. DIA.				
SP2	4 5/8"	9/16"				

R F COILS

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA AIRCASTLE PART No.	REPLACEMENT DATA MEISSNER PART No.
L1	Loop Ant.	1.5Ω		LL17	
L2	Osc. Coil	7.5Ω	.8Ω	LO14	14-1073
L3	1st IF	32Ω	32Ω	LI6	16-6658
L4	2nd IF	28Ω	28Ω	LI7	16-6660

PHONO CARTRIDGE and NEEDLE

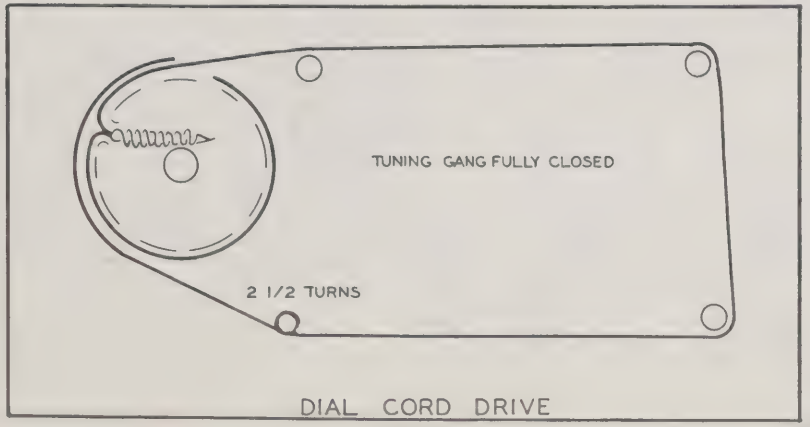
ITEM No.	REPLACEMENT DATA AIRCASTLE PART No.	ASTATIC PART No. CARTRIDGE	ASTATIC PART No. NEEDLE	SHURE PART No. CARTRIDGE	SHURE PART No. NEEDLE	REMARKS
M1	AC-PU-7	8D †	Q	920W †	A65MG A62A	† Replaces complete tone arm and cartridge assembly.

DIAL LIGHTS

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA AIRCASTLE PART No.		NOTES
M2	Screw	117			PB-2		Type 120 volt 7 watt

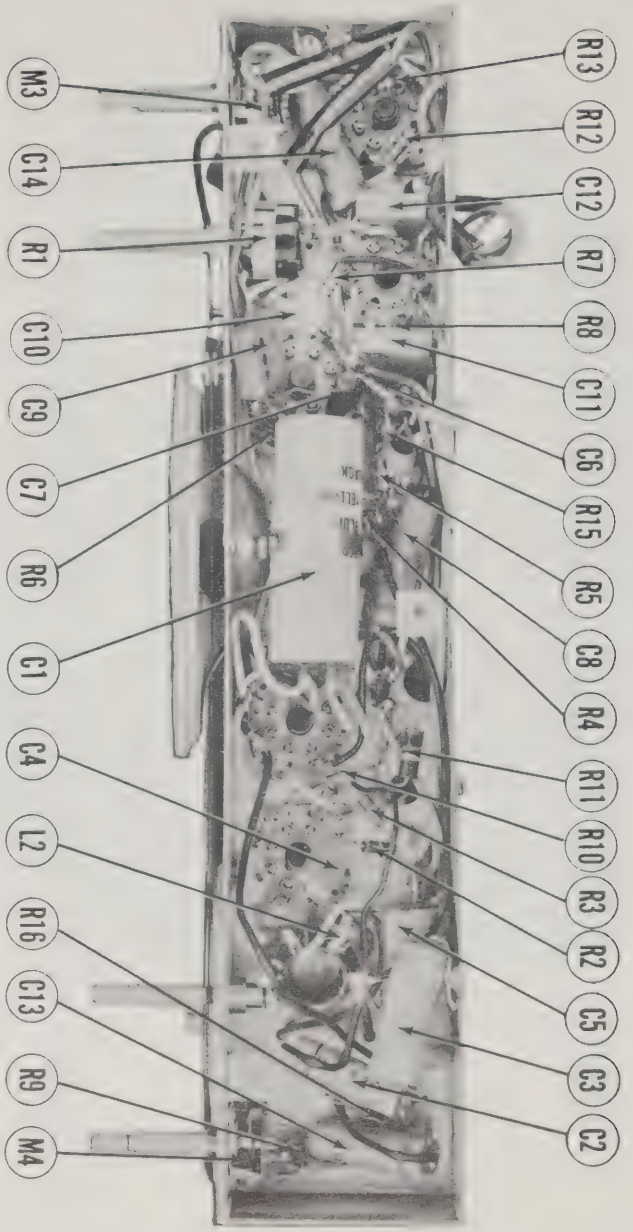
MISCELLANEOUS

ITEM No.	PART NAME	AIRCASTLE PART No.	NOTES
M3	Switch	SW-1	Radio-Phono
M4	Switch	SW-2	Tone
M5	Switch		Phono Motor
M6	2 Gang Var. Cap.	GC-5	(25-490MMF, 31-225MMF)



DIAL CORD DRIVE

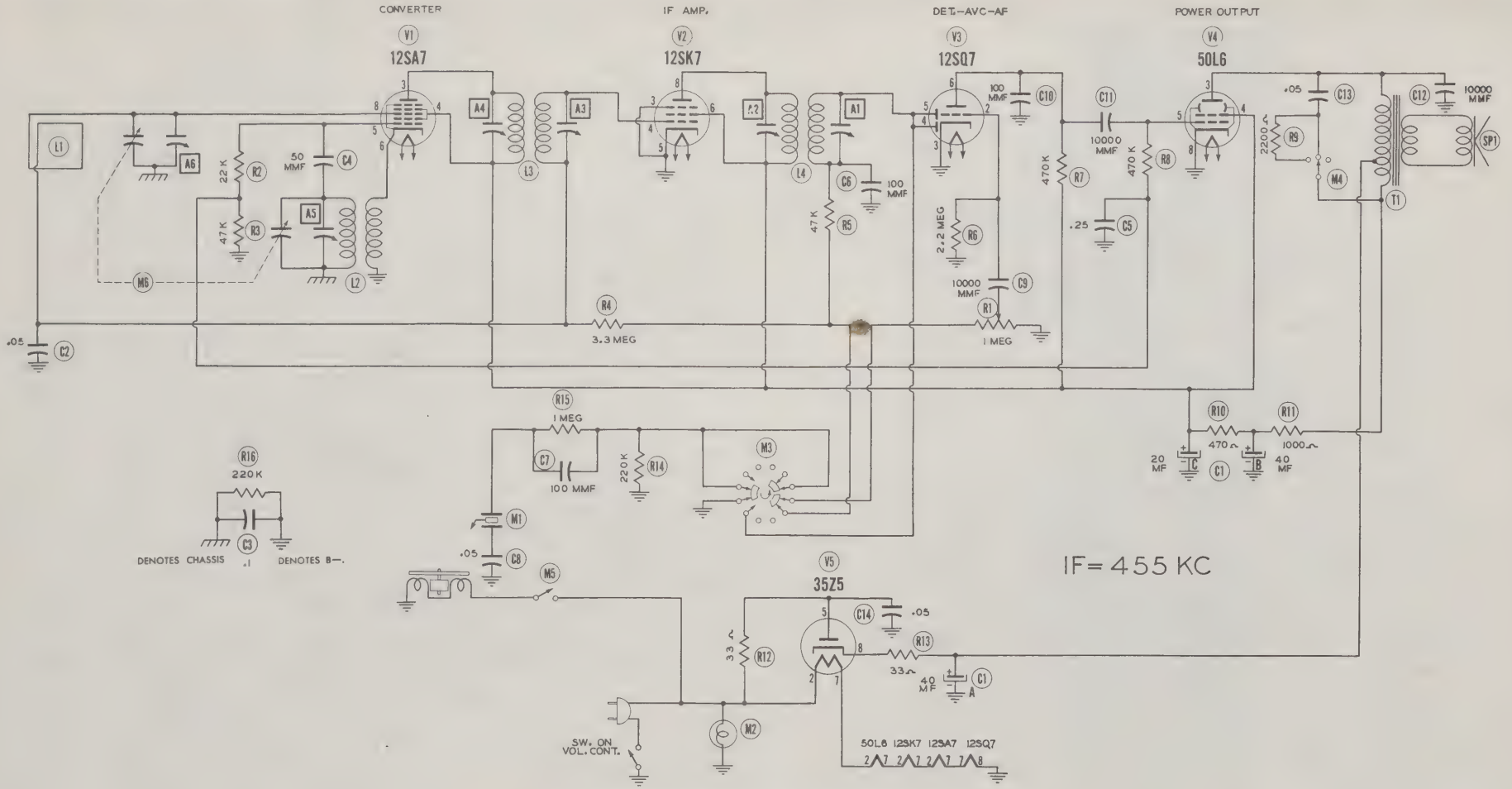
CHASSIS—BOTTOM VIEW



SET 97 FOLDER 1

AIRCASTLE MODEL 6053

AIRCASTLE MODEL 6053



ALL MEASUREMENTS TAKEN WITH RADIO-PHONO SWITCH IN "RADIO" POSITION.

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	12SA7GT	0V.	24VAC	80VDC	80VDC	$-10VDC	0V.	12VAC	-.2VAC
V 2	12SK7GT	0V.	36VAC	0V.	-.2VDC	0V.	80VDC	24VAC	80VDC
V 3	12SQ7GT	0V.	-.8VDC	0V.	-.6VDC	-.6VDC	34VDC	12VAC	0V.
V 4	50L6GT	0V.	85VAC	105VDC	80VDC	-1.5VDC	-6.1VDC	36VAC	0V.
V 5	35Z5GT	0V.	117VAC	110VAC	0V.	112VAC	115VDC	85VAC	115VDC

$ TAKEN WITH VACUUM TUBE VOLTMETER.

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	12SA7GT	220KΩ	24Ω	†1.4KΩ	†1.4KΩ	80KΩ	1Ω	12Ω	3.5 Meg.
V 2	12SK7GT	220KΩ	36Ω	0Ω	3.5 Meg.	0Ω	†1.4KΩ	24Ω	†1.4KΩ
V 3	12SQ7GT	220KΩ	2.5 Meg.	0Ω	850KΩ	850KΩ	†470KΩ	12Ω	0Ω
V 4	50L6GT	220KΩ	85Ω	†225Ω	†1.4KΩ	500KΩ	60KΩ	36Ω	0Ω
V 5	35Z5GT	220KΩ	120Ω	110Ω	Inf.	112Ω	64KΩ	85Ω	64KΩ

† MEASURED FROM PIN 8 OF V5.

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

AIRCASTLE
MODELS 90091, 9009W

AIRCASTLE
MODELS 90091, 9009W

AIRCASTLE MODEL 9009W

TRADE NAME	Aircastle, Models 9009I, 9009W
SUPPLIER	Spiegel Inc., 1061 W. 35th St., Chicago, Illinois
TYPE SET	AC-DC Operated Superheterodyne Receiver with Loop Antenna
TUBES (FIVE)	Types 12BE6 or 12SA7 Converter, 12BA6 or 12SK7 IF Amp., 12AT6 or 12SQ7 DET-AVC-AF, 50B5 or 50L6 Power Output, 35W4 or 35Z5 Rectifier
POWER SUPPLY	110-120 Volts AC-DC RATING .27 Amp. at 117 Volts AC
TUNING RANGE--BROADCAST	55-1700KC

ALIGNMENT INSTRUCTIONS--READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer turn tuning cap fully closed and set pointer parallel with base of dial.
Use isolation transformer if available. If not connect a .1MFD capacitor in series with low side of signal generator and B-.
Loop should be maintained in same relative position to chassis as when receiver is in cabinet.
Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.05MFD	High side to stator on rear section of tuning gang. Low side to B-.	455KC (400 ∿ Mod.)	Tuning gang fully open	Across voice coil	A1, A2, A3, A4	Adjust for maximum output.
2.		Loop	1720KC	"	"	A5	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
3.		Loop	1400KC	Tune for max. output.	"	A6	"

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PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: AIRCASTLE PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
V1A	Converter	12BE6	12BE6	7CH	
B	Converter	12SA7	12SA7	8R	
V2A	IF Amp.	12BA6	12BA6	7BK	
B	IF Amp.	12SK7	12SK7	8N	
V3A	DET.-AVC-AF	12AT6	12AT6	7BT	
B	DET.-AVC-AF	12SQ7	12SQ7	8Q	
V4A	Power Output	50B5	50B5	7BZ	
B	Power Output	50L5	50L6	7AC	
V5A	Rectifier	35W4	35W4	5BQ	
B	Rectifier	35Z5	35Z5	6AD	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: AIRCASTLE PART No.	AEROVOX PART No.	CENTRALAB PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	50	150	CL-10023	PRS150/50-50			TA-505	Filter-Blue
B	50	150						Filter-Red
C2	.05	200	CP-14503	P288-05			TM-15	AVC Filter
C3	.15	200	CP-14154	P288-15			72P53	Line Isolation
C4	250	500	CM-15251	1468-00025	D6-251	GP2K-250	1FM-325	Diode RF Filter
C5	250	500	CM-15251	1468-00025	D6-251	GP2K-250	1FM-325	Diode RF Filter
C6	.005	600	CP-12502	P688-005	D6-502	811-005	TM-25	Audio Coupling
C7	.005	600	CP-12502	P688-005	D6-502	811-005	TM-25	Audio Coupling
C8	.02	200	CP-12203	P488-02			TM-12	Output Plate Bypass
C9	.05	600	CP-14503	P688-05			TM-15	Line Filter

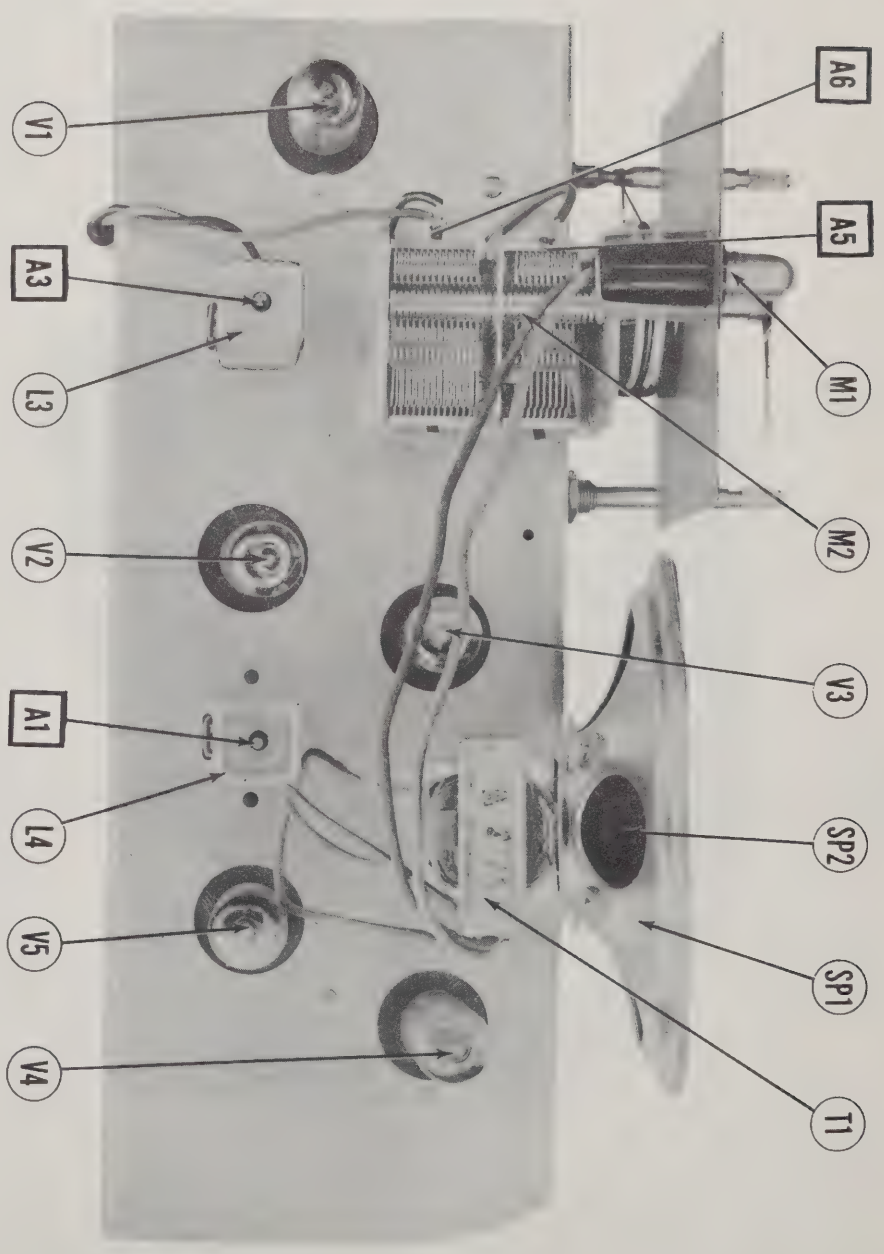
CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: AIRCASTLE PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	INSTALLATION NOTES
R1A	1 Meg.	½	VC-12110B	Q13-137	AM-63-Z	BSK-70-S	Volume control
B	Shaft		Not Req.	Not Req.	KSS-3	Not Req.	Attach to R1A per instructions
C	Switch		Not Req.	76-1	SW-A	Not Req.	Attach to R1A per instructions

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: AIRCASTLE PART No.	IRC PART No.	IDENTIFICATION CODES
R2	22KΩ	½	RC-32202	BTS-22K	Osc. Grid
R3	68Ω	½	RC-30680	BW-½-68	IF Cathode
R4	2.2 Meg.	½	RC-32204	BTS-2.2 Meg.	AVC Network
R5	100KΩ	½	RC-31003	BTS-100K	Diode Filter
R6	10 Meg.	½	RC-31005	BTS-10 Meg.	AF Amp. Grid
R7	220KΩ	½	RC-32203	BTS-220K	AF Amp. Plate
R8	470KΩ	½	RC-34703	BTS-470K	Output Grid
R9	150Ω	½	RC-31500	BW-½-150	Output Cathode
R10	1000Ω	1	RC-41001	BW-1-1000	Filter

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		AIRCASTLE PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
	PRI.	SEC.	PRI.	SEC.					
T1	2.3KΩ	3.1Ω	175Ω	.5Ω	Part of Speaker	A-3876 ①	A-2928 ①	RO-2 ①	① Bend mounting tabs down, file out slots and mount on original bracket.

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			AIRCASTLE PART No.	JENSEN PART No.	QUAM PART No.	
	FIELD	V. C. IMP.		ST-105③ ④		② Use universal mounting bracket provided.
SP1	PM	3.1Ω	SR-10014C	MOD. P5-X	5A07 ② ③	③ Remount output transformer.
	CONE DIA.	V. C. DIA.				④ Drill and tap magnet frame.
SP2	4 13/16"	9/16"				

R F COILS

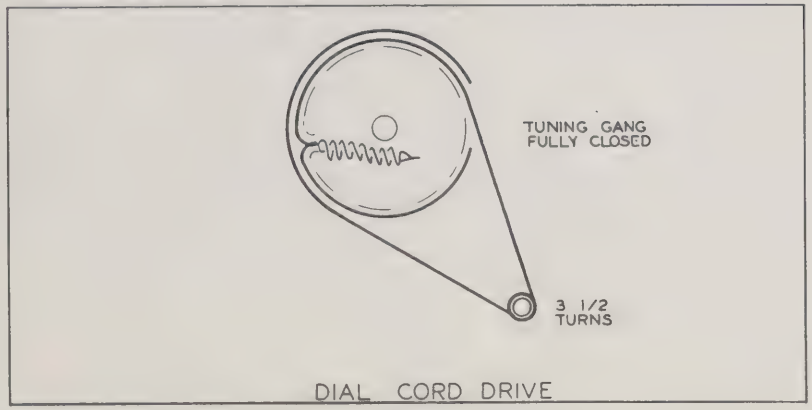
ITEM No.	USE	DC RES.		REPLACEMENT DATA		
		PRI.	SEC.	AIRCASTLE PART No.	MEISSNER PART No.	
L1A	Loop Ant.	.2Ω	3.2Ω	AL-10025		
B				AL-10025X		Alternate loop antenna.
L2	Osc. Coil	.6Ω	3.8Ω	TRC-10013	14-1073	
L3	1st IF	16Ω	16.5Ω	TS-10043	16-6678	
L4	2nd IF	16Ω	16.5Ω	TS-10043	16-6678	

DIAL LIGHTS

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		NOTES
					AIRCASTLE PART No.		
M1	Bayonet	6-8	.15	Brown	DB-10000		Type #47

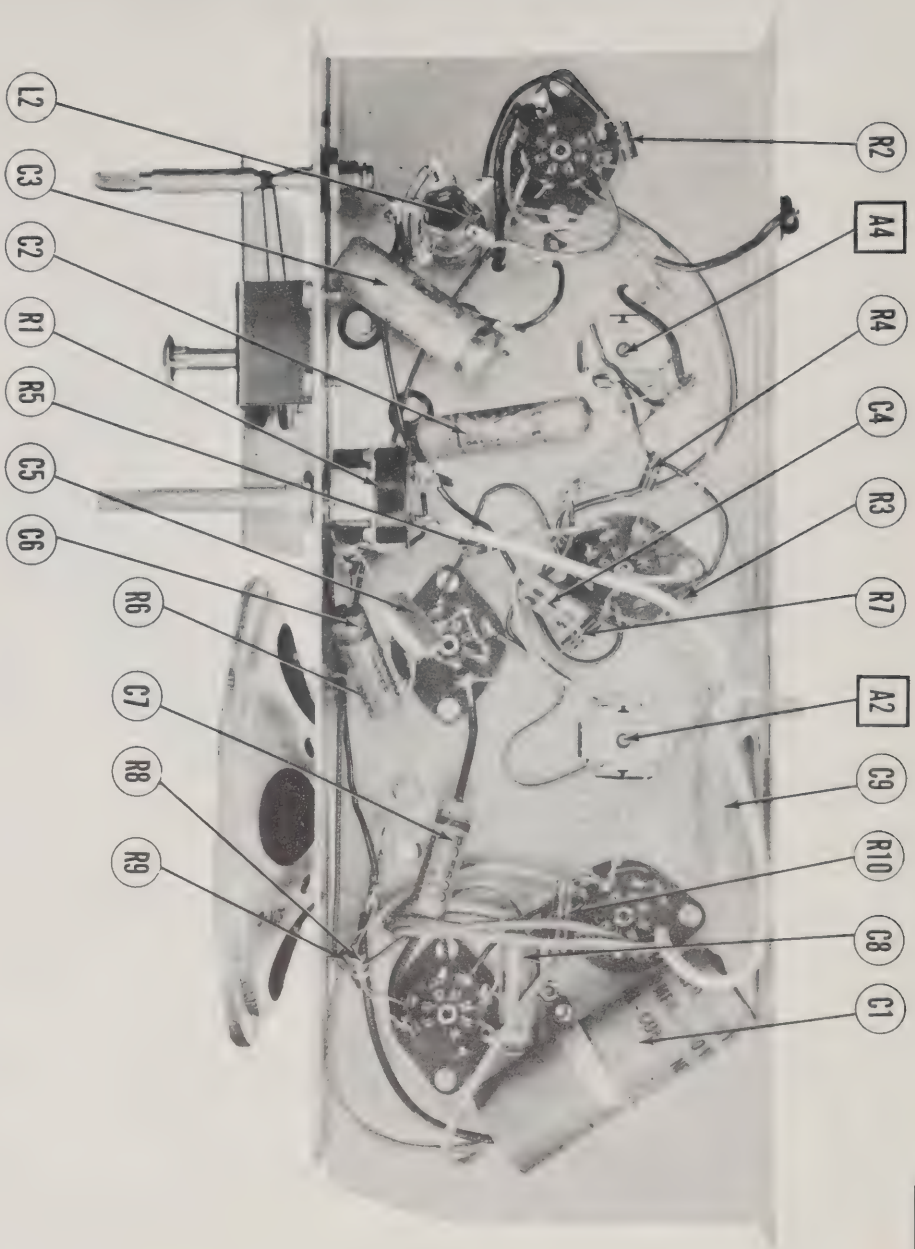
MISCELLANEOUS

ITEM No.	PART NAME	AIRCASTLE PART No.	NOTES
M2	2 Gang Var. Cap.	CV-10022	(24-422MMF, 30-211MMF)



DIAL CORD DRIVE

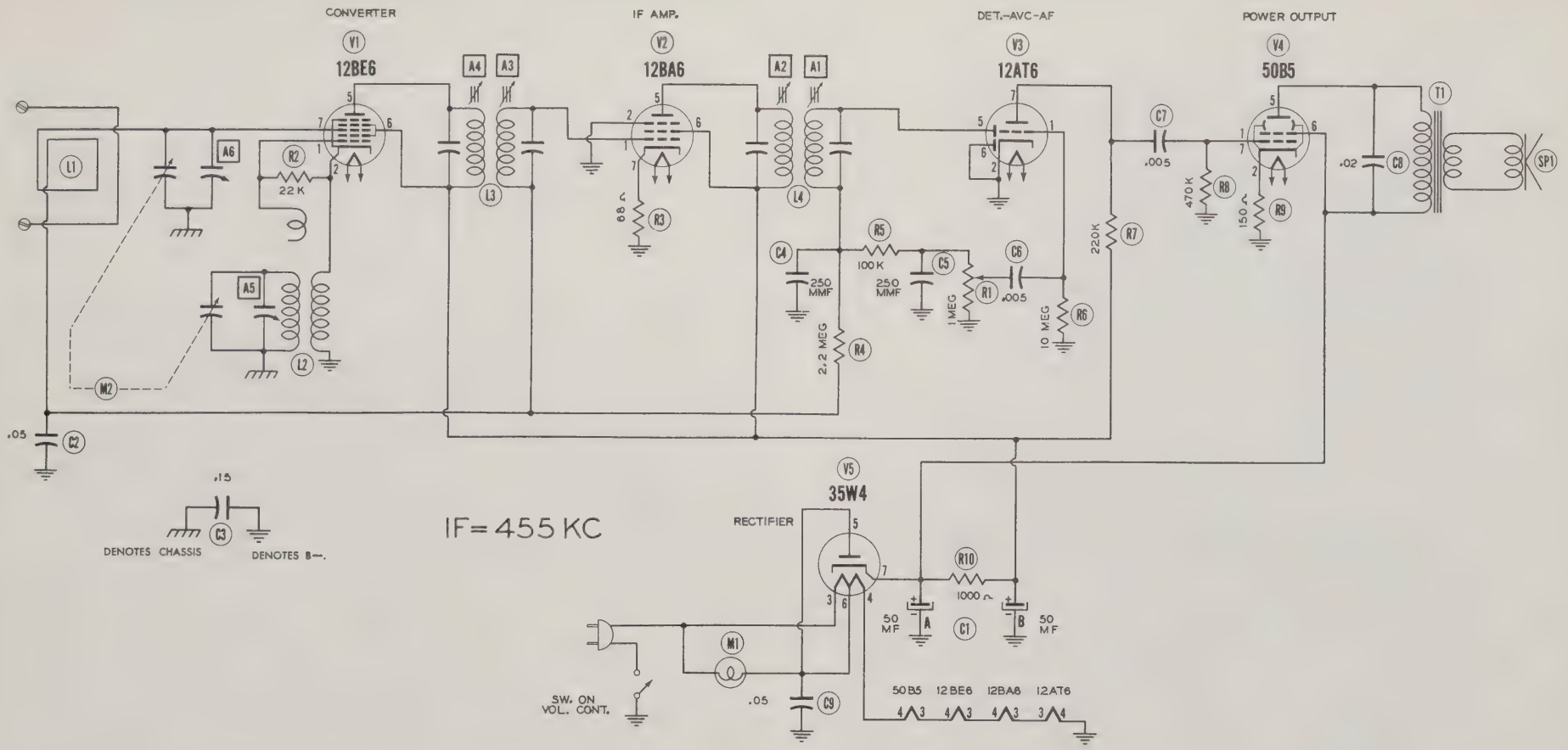
CHASSIS—BOTTOM VIEW



SET 97 FOLDER 2

AIRCASTLE MODEL 9009

AIRCASTLE MODEL 9009



VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V 1	12BE6	§-9VDC	0V.	24VAC	37VAC	95VDC	95VDC	-.1VDC
V 2	12BA6	-.1VDC	0V.	12VAC	24VAC	95VDC	95VDC	.8VDC
V 3	12AT6	-.5VDC	0V.	12VAC	0V.	-.3VDC	0V.	55VDC
V 4	50B5	0V.	7VDC	37VAC	85VDC	112VDC	95VDC	0V.
V 5	35W4	95VDC	0V.	85VAC	117VAC	110VAC	110VAC	120VDC

§ TAKEN WITH VACUUM TUBE VOLTMETER.

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V 1	12BE6	22KΩ	.5Ω	24Ω	36Ω	†1000Ω	†1000Ω	3.5 Meg.
V 2	12BA6	3.5 Meg.	0Ω	13Ω	24Ω	†1000Ω	†1000Ω	68Ω
V 3	12AT6	10 Meg.	0Ω	13Ω	0Ω	1 Meg.	0Ω	†220KΩ
V 4	50B5	470KΩ	150Ω	36Ω	90Ω	†170Ω	†1000Ω	470KΩ
V 5	35W4	†1000Ω	Inf.	90Ω	120Ω	120Ω	120Ω	200KΩ

† MEASURED FROM PIN 7 OF V5.

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1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

EMERSON MODELS 570, 574, 580
(BATTERY OPERATED)

EMERSON MODEL 574

TRADE NAME	Emerson, Models 570, 574, 580 (Ch. 120064)
MANUFACTURER	Emerson Radio and Phonograph Corp., 111 8th Ave., New York, New York
TYPE SET	Battery Operated Superheterodyne Receiver with Loop Antenna
TUBES (FOUR)	Types 1R5 Converter, 1T4 IF Amp., 1S5 DET-AVC-AF, 3S4 Power Output,
POWER SUPPLY	1.5 Volts "A" Supply and 67.5 Volts "B" Supply
RATING	240 MA at 1.5 Volts DC and 9.2 MA at 67.5 Volts DC
TUNING RANGE—BROADCAST	540-1600KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set dial pointer turn tuning gang fully closed and set the pointer to the reference mark at the low frequeny end of the dial backplate.

Loop should be maintained in same relative position to chassis as when receiver is in cabinet.

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.01MFD	High side to stator on front section of tuning gang. Low side to chassis.	455KC (400 ∿ Mod.)	Tuning gang fully open	Across voice coil	A1, A2, A3, A4	Adjust for maximum output.
2.		Loop	1620KC	"	"	A5	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
3.		Loop	600KC	Set pointer 7/16 in. to the right of the calibration mark.	"	A6	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output. Repeat steps 2 and 3 until no further improvement can be made.
4.		Loop	1400KC	Tune for max. output.	"	A7	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.

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PARTS LIST AND DESCRIPTIONS

EMERSON MODEL 570

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: EMERSON PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
V1	Converter	1R5	1R5	7AT	
V2	IF Amp.	1T4	1T4	6AR	
V3	DET.-AVC-AF	1S5	1S5	6AU	
V4	Power Output	3S4	3S4	7BA	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: EMERSON PART No.	AEROVOX PART No.	CENTRALAB PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1	16	100	925063	SRE150/15			UT-161	RF Bypass
C2	.05	200	920494	P285-05			68P16	AVC Filter
C3	100		928010	GP100M	D6-101	GP1K-100	1FM-31	Osc. Grid Cap.
C4	.02	200	920120	P285-02			68P15	Decoupling
C5	212		928104	GP220M	D6-221	GP2K-220	1FM-32	Diode RF Filter
C6	.001	200	920497	P285-001	D6-102	GP2L-001	68P1	Audio Coupling
C7	.01	100	920485	P285-01	D6-103	811-01	68P14	AF Amp. Screen Bypass
C8	100		928013	GP100M	D6-101	GP1K-100	1FM-31	AF Amp. Plate Bypass
C9	.001	200	920497	P285-001	D6-102	GP2L-001	68P1	Audio Coupling
C10	.005	200	920496	P285-005	D6-502	811-005	68P11	Output Plate Bypass

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: EMERSON PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	INSTALLATION NOTES
R1	1 Meg.	½	390025	Q13-137	15/16-63-Z	BSK-70	Volume control

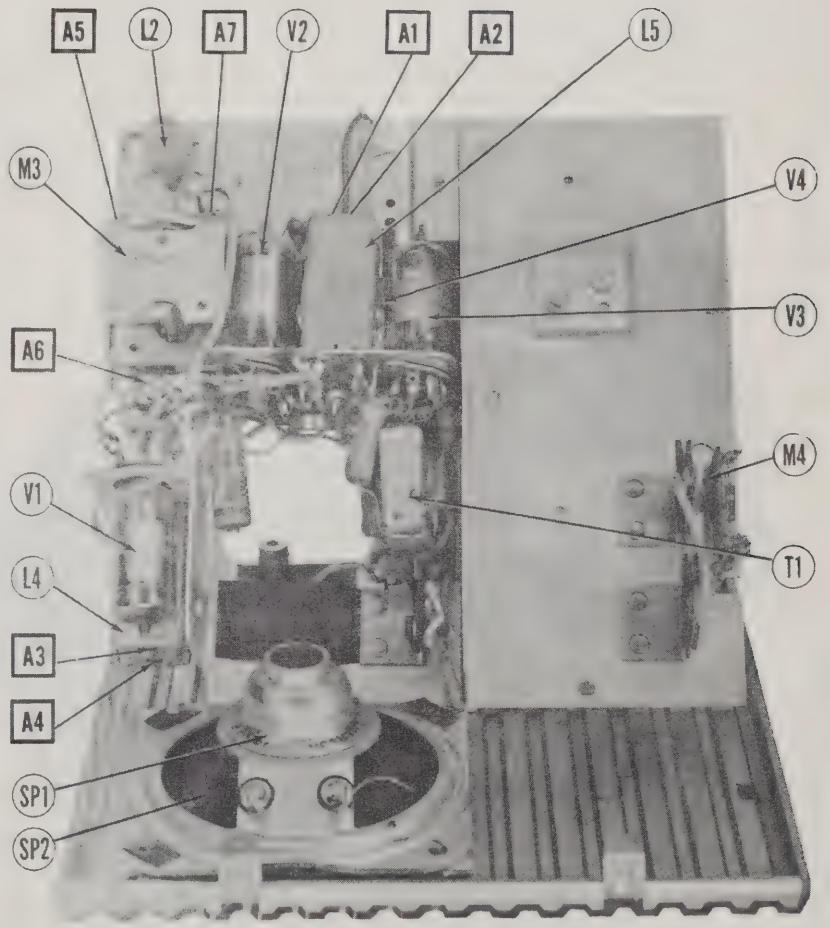
RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: EMERSON PART No.	IRC PART No.	IDENTIFICATION CODES
R2	100KΩ	½	340970	BTS-100K	Osc. Grid
R3	10KΩ	½	340730	BTS-10K	Screen Dropping
R4	3.3 Meg.	½	351330	BTS-3.3 Meg.	AVC Network
R5	10 Meg.	½	351450	BTS-10 Meg.	AF Amp. Grid
R6	3.3 Meg.	½	351330	BTS-3.3 Meg.	AF Amp. Screen
R7	470KΩ	½	351130	BTS-470K	AF Amp. Plate
R8	1.5 Meg.	½	351250	BTS-1.5 Meg.	Output Grid
R9	820Ω	½	340470	BTS-820	Bias Network

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: EMERSON PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	INSTALLATION NOTES
T1	8KΩ	3.6Ω	350Ω	.4Ω	734011	A-3329 *	A-2927	RO-301	* Drill one new mounting hole.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA EMERSON PART No.	VIKING PART No.	QUAM PART No.	INSTALLATION NOTES
	FIELD	V. C. IMP.				
SP1	PM	3.6Ω	180029	35J4	3A07	
	CONE DIA.	V. C. DIA.				
SP2	3 3/8"	9/16"				

R F COILS

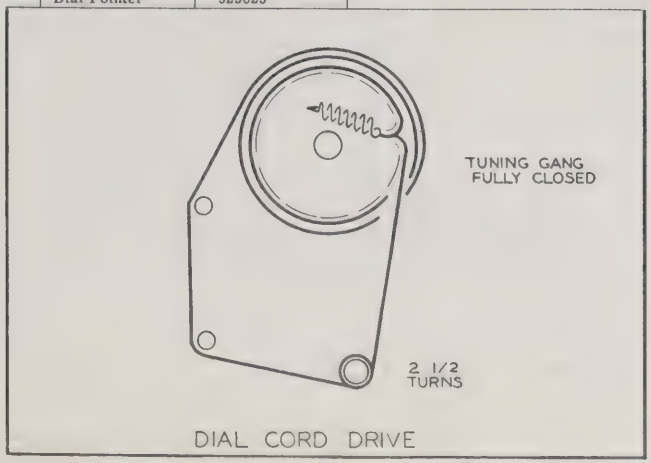
ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA EMERSON PART No.	MEISSNER PART No.	
L1	Loop Ant.	3.8Ω		700019		
L2	Ant. Loading	2.5Ω		708007		
L3	Osc. Coil	2.4Ω	8Ω	716011	14-1074	
L4	1st IF	20.5Ω	17.5Ω	720028	16-6668	
L5	2nd IF	20.5Ω	17.5Ω	720028	16-6669	Alternate 720035

BATTERIES

ITEM No.	VOLTAGE	EMERSON PART No.	REPLACEMENT DATA EVEREADY "A"	EVEREADY "B"	EVEREADY "A-B"	BURGESS "A"	BURGESS "B"	BURGESS "A-B"	INSTALLATION NOTES
M1	1.5 V "A"		950			2R			Use 3 in parallel
M2	67.5 V "B"			467			XX45		

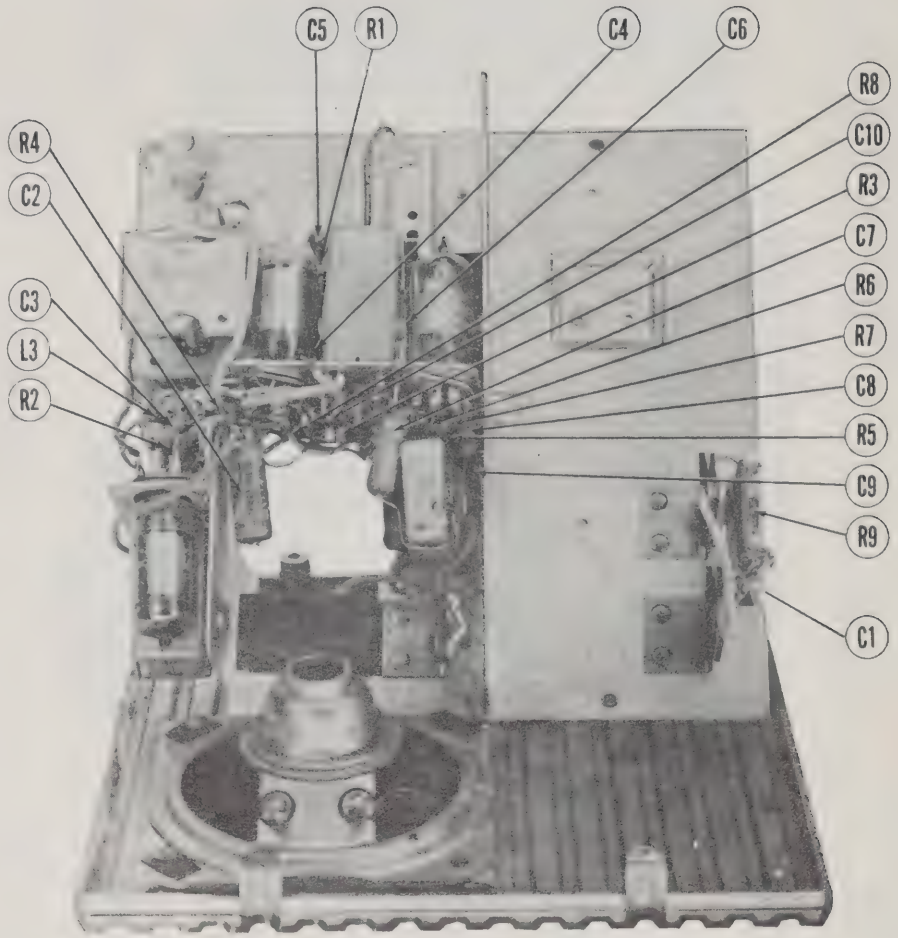
MISCELLANEOUS

ITEM No.	PART NAME	EMERSON PART No.	NOTES
M3	2 Gang Var. Cap.	900022	(12-280MMF, 16-132MMF)
M4	Switch	510017	On-Off
	Dial Pointer	525025	

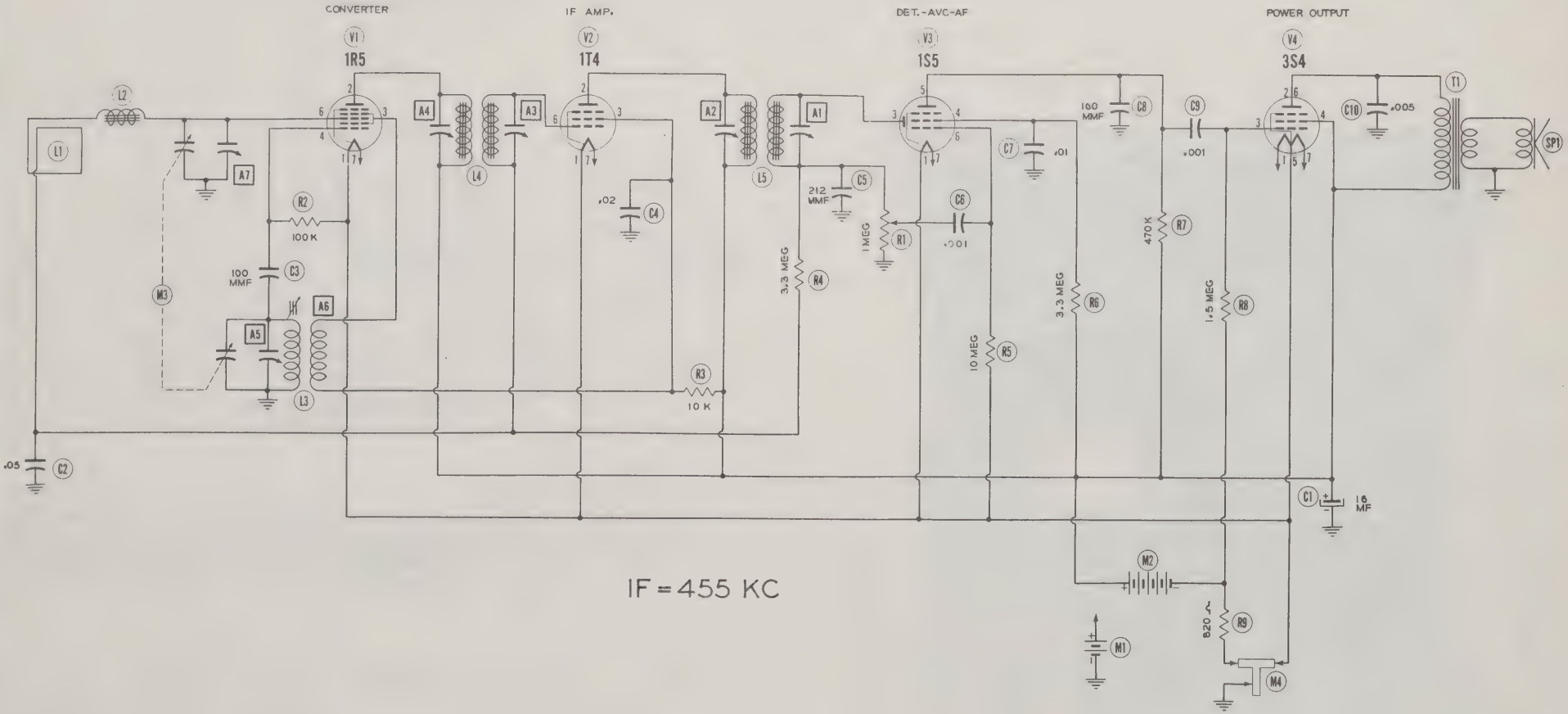


DIAL CORD DRIVE

CHASSIS—BOTTOM VIEW



EMERSON MODEL 570



VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V 1	1R5	0V.	60VDC	40VDC	8-8VDC	0V.	-.2VDC	1.5VDC
V 2	1T4	0V.	60VDC	40VDC	0V.	0V.	-.2VDC	1.5VDC
V 3	1S5	0V.	60VDC	-.2VDC	11.5VDC	20VDC	0V.	1.5VDC
V 4	3S4	1.5VDC	58VDC	-1.4VDC	60VDC	0V.	58VDC	1.5VDC

§ TAKEN WITH VACUUM TUBE VOLTMETER.

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V 1	1R5	*	†20.5Ω	†10KΩ	100KΩ	*	1 Meg.	*
V 2	1T4	*	†20.5Ω	†10KΩ	Inf.	*	4.3 Meg.	*
V 3	1S5	*	†0Ω	1 Meg.	†3.3 Meg.	†470KΩ	10 Meg.	*
V 4	3S4	*	†350Ω	1.5 Meg.	†0Ω	*	†350Ω	*

* DO NOT MEASURE FILAMENT RESISTANCE WITH OHMMETER.
† MEASURED FROM PIN 4 OF V4.

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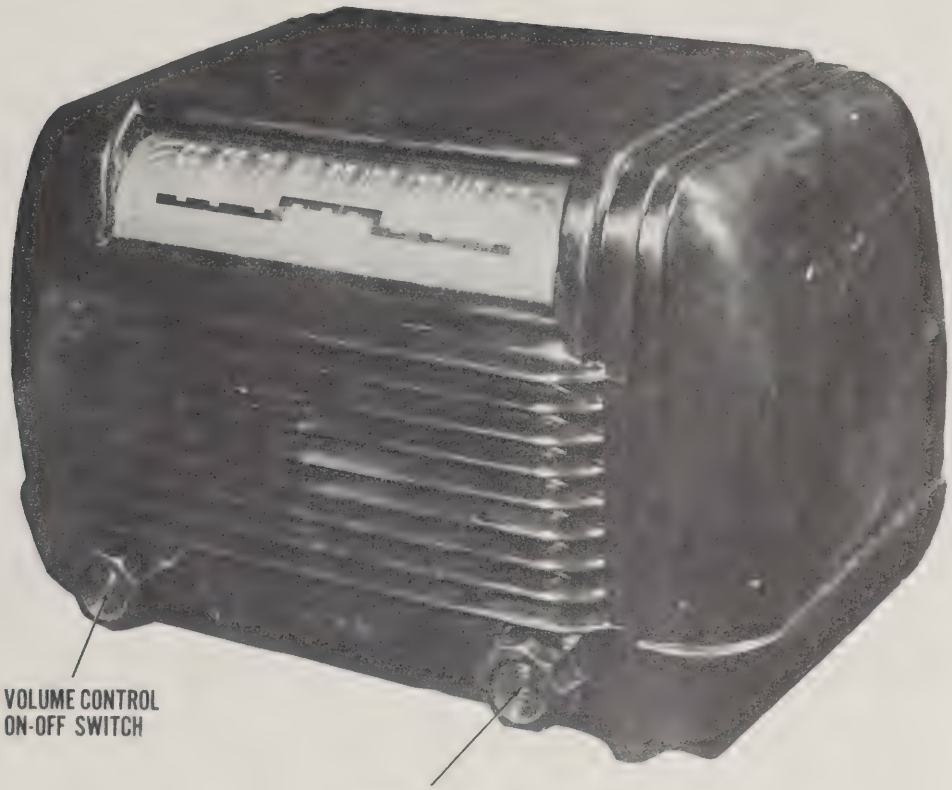
97-3

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Nominal tolerance on component values makes possible a variation of ± 15% in voltage and resistance readings.
5. Volume control at maximum, no signal applied for voltage measurements.



FADA
MODEL 830

FADA
MODEL 830

FADA MODEL 830

TRADE NAME	Fada, Model 830
MANUFACTURER	Fada Radio and Electric Co., Inc., 525 Main St., Belleville, New Jersey
TYPE SET	AC-DC Operated Superheterodyne Receiver with Loop Antenna
TUBES (FIVE)	Types 12BE6 Converter, 12BA6 IF Amp., 12AT6 DET-AVC-AF, 50B5 Power Output, 35W4 Rectifier
POWER SUPPLY	105-125 Volts AC-DC — RATING .25 Amp. at 117 Volts AC
TUNING RANGE—BROADCAST	530-1680KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer turn tuning gang fully closed and set pointer to the calibration mark on the upper left hand end on the pointer carriage slide.

Use isolation transformer if available. If not connect a .1MFD capacitor in series with low side of signal generator and chassis.

Loop should be maintained in same relative position to chassis as when receiver is in cabinet.

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.1MFD	High side to stator on rear section of tuning gang. Low side to chassis.	456KC (400 ∿ Mod.)	Tuning gang fully open	Across voice coil	A1, A2, A3, A4	Adjust for maximum output. If isolation transformer is not used, reduce dummy antenna to .001MFD to reduce hum modulation.
2.		Loop	1680KC	"	"	A5	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
3.		Loop	530KC	Tuning gang fully closed.	"		Check tracking. If necessary adjust the slotted end plates of the oscillator section of the tuning gang.
4.		Loop	1500KC	Tune for max. output	"	A6	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.

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PARTS LIST AND DESCRIPTIONS

FADA MODEL 830

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RMA BASE TYPE	INSTALLATION NOTES
		FADA PART No.	STANDARD REPLACEMENT		
V1	Converter	12BE6	12BE6	7CH	
V2	IF Amp.	12BA6	12BA6	7BK	
V3	DET.-AVC-AF	12AT6	12AT6	7BT	
V4	Power Output	50B5	50B5	7BZ	
V5	Rectifier	35W4	35W4	5BQ	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA					IDENTIFICATION CODES AND INSTALLATION NOTES
	CAP.	VOLT	FADA PART No.	AEROVOX PART No.	CENTRALAB PART No.	ERIE PART No.	SPRAGUE PART No.	
C1A	40	150	22.38	PRSA864D			TA-304	Filter-Blue
B	30	150						Filter-Red
C	20	150						Filter-Yellow
C2	.05	200	12.11	P288-05			TM-15	AVC Filter
C3	100		17.21	GP100M	D6-101	GP1K-100.	1FM-31	Osc. Grid Cap.
C4	220		17.22	GP220M	D6-221	GP2K-220	1FM-325	Diode RF Filter
C5	.005	600	12.4	P688-005	D6-502	811-005	TM-25	Audio Coupling
C6	220		17.22	GP220M	D6-221	GP2K-220	1FM-325	AF Amp. Plate Bypass
C7	.01	400	12.6	P488-01	D6-103	821-01	TM-11	Audio Coupling
C8	.03	400	12.9	P488-03			TM-13	Output Plate Bypass
C9	.05	400	12.12	P488-05			TM-15	Line Filter

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA				INSTALLATION NOTES
	RESISTANCE	WATTS	FADA PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	
R1A	500KΩ	½	52.31	Q13-133	M-60-Z	B-60-S	Volume control
B	Switch		Not Req.	76-1	SW-A	Not Req.	Attach to R1A per instructions

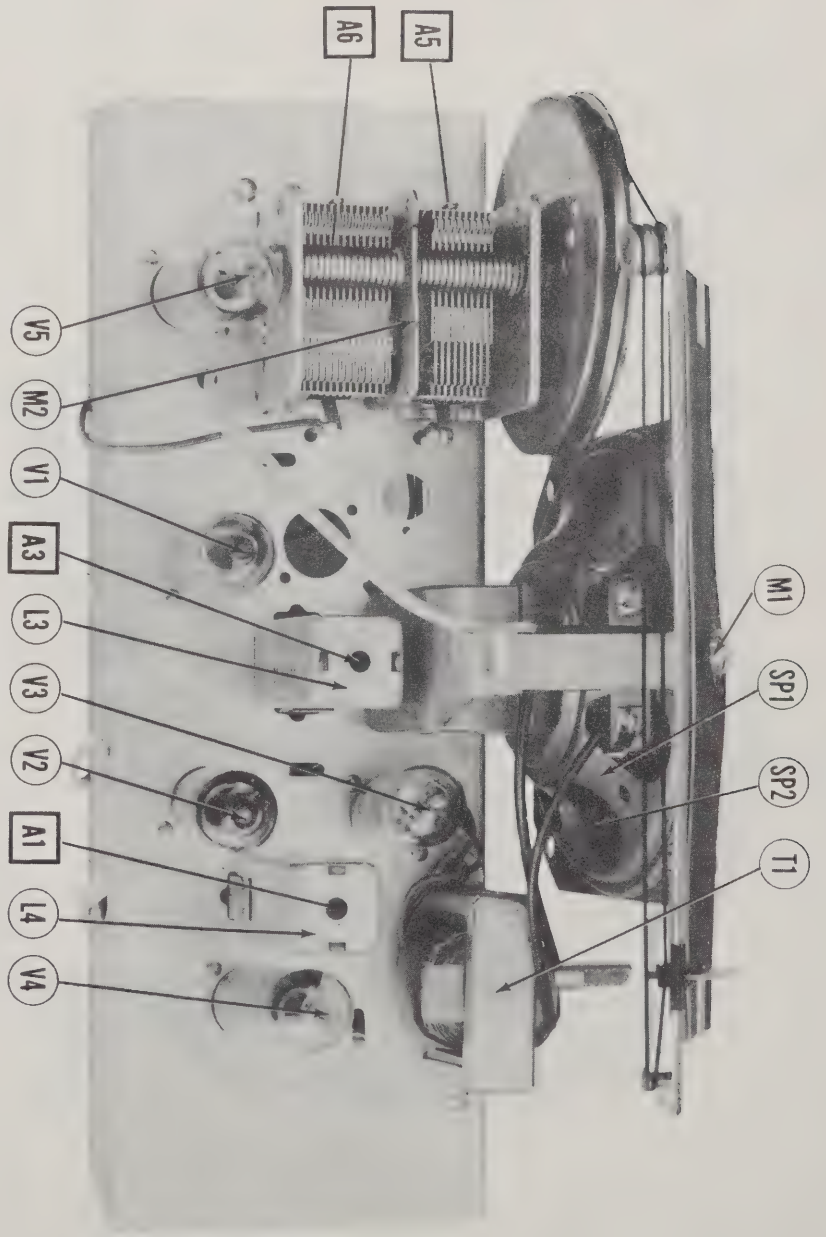
RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	FADA PART No.	IRC PART No.	
R2	22KΩ	½	32.13	BTS-22K	Osc. Grid
R3	150Ω	½	32.4	BW-½-150	IF Cathode
R4	1 Meg.	½	32.23	BTS-1 Meg.	AVC Network
R5	3.9 Meg.	½	32.26	BTS-3.9 Meg.	AF Amp. Grid
R6	220KΩ	½	32.18	BTS-220K	AF Amp. Plate
R7	470KΩ	½	32.20	BTS-470K	Output Grid
R8	130Ω	½	32.3		Output Cathode
R9	1200Ω	1	32.29	BW-1-1200	Filter
R10	200Ω	1	32.27	BW-1-220	Filter
R11	27Ω	½	32.49		Surge Limiter
R12	30Ω	1			Filament Dropping-Wire Wound

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		FADA PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
	PRI.	SEC.	PRI.	SEC.					
T1	2.5KΩ	3.6Ω	220Ω	.6Ω	42.40	A-3876	A-3025 ①	RO-2	① Drill one new mounting hole.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA FADA PART No.	JENSEN PART No.	QUAM PART No.	INSTALLATION NOTES
	FIELD	V. C. IMP.		ST-113		
SP1	PM	3.6Ω	107.32	MOD. P4-X	4A07	
	CONE DIA.	V. C. DIA.				
SP2	4"	9/16"				

R F COILS

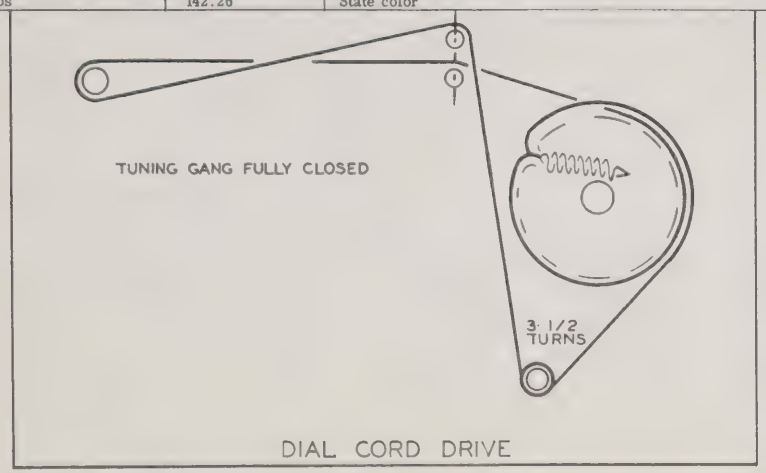
ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA FADA PART No.	REPLACEMENT DATA MEISSNER PART No.
L1	Loop Ant.	.1Ω	2.2Ω	37.157	
L2	Osc. Coil	6.5Ω		37.57	14-1073
L3	1st IF	18Ω	18Ω	37.81	16-6678
L4	2nd IF	28Ω	29Ω	37.80	16-6678

DIAL LIGHTS

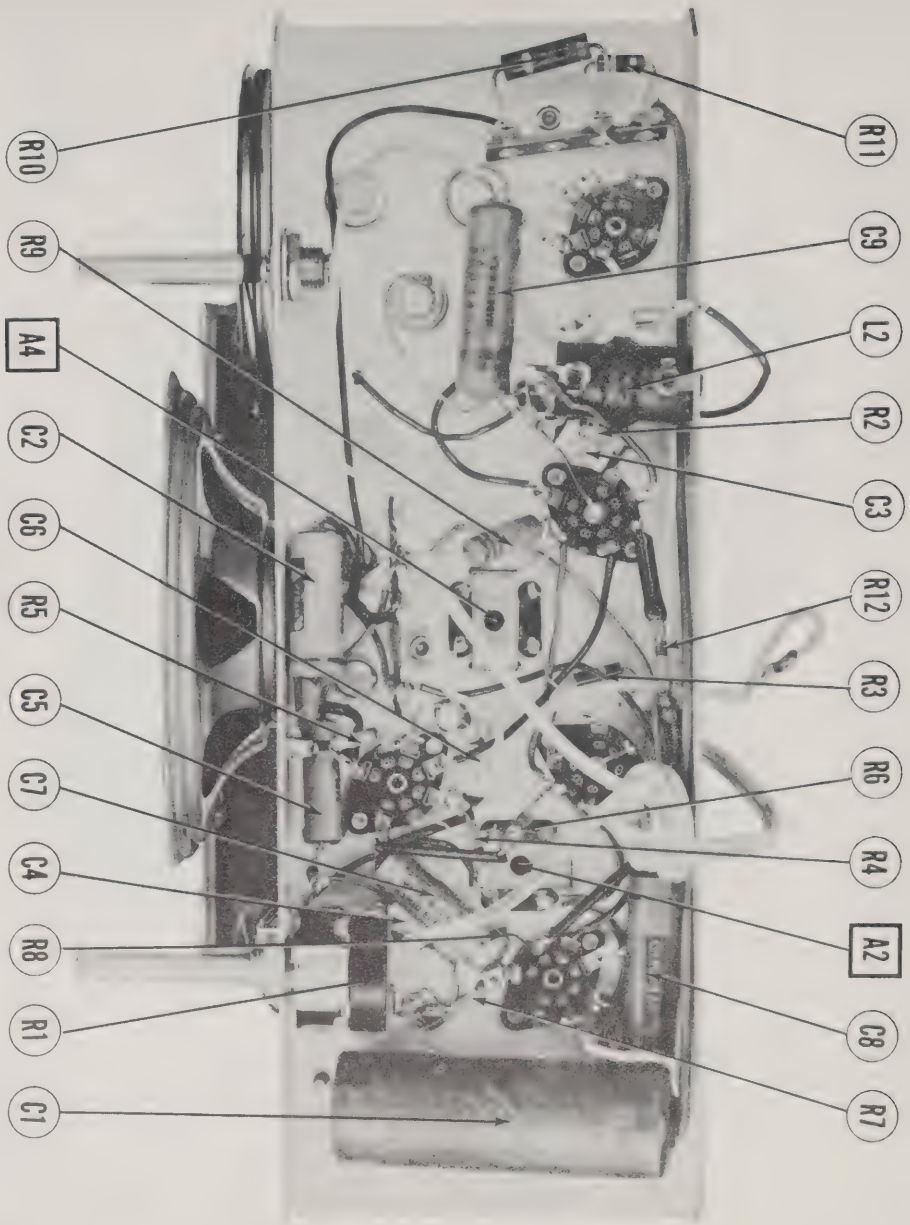
ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA FADA PART No.		NOTES
M1	Bayonet	6-8	.15	Brown	122.1		Type #47

MISCELLANEOUS

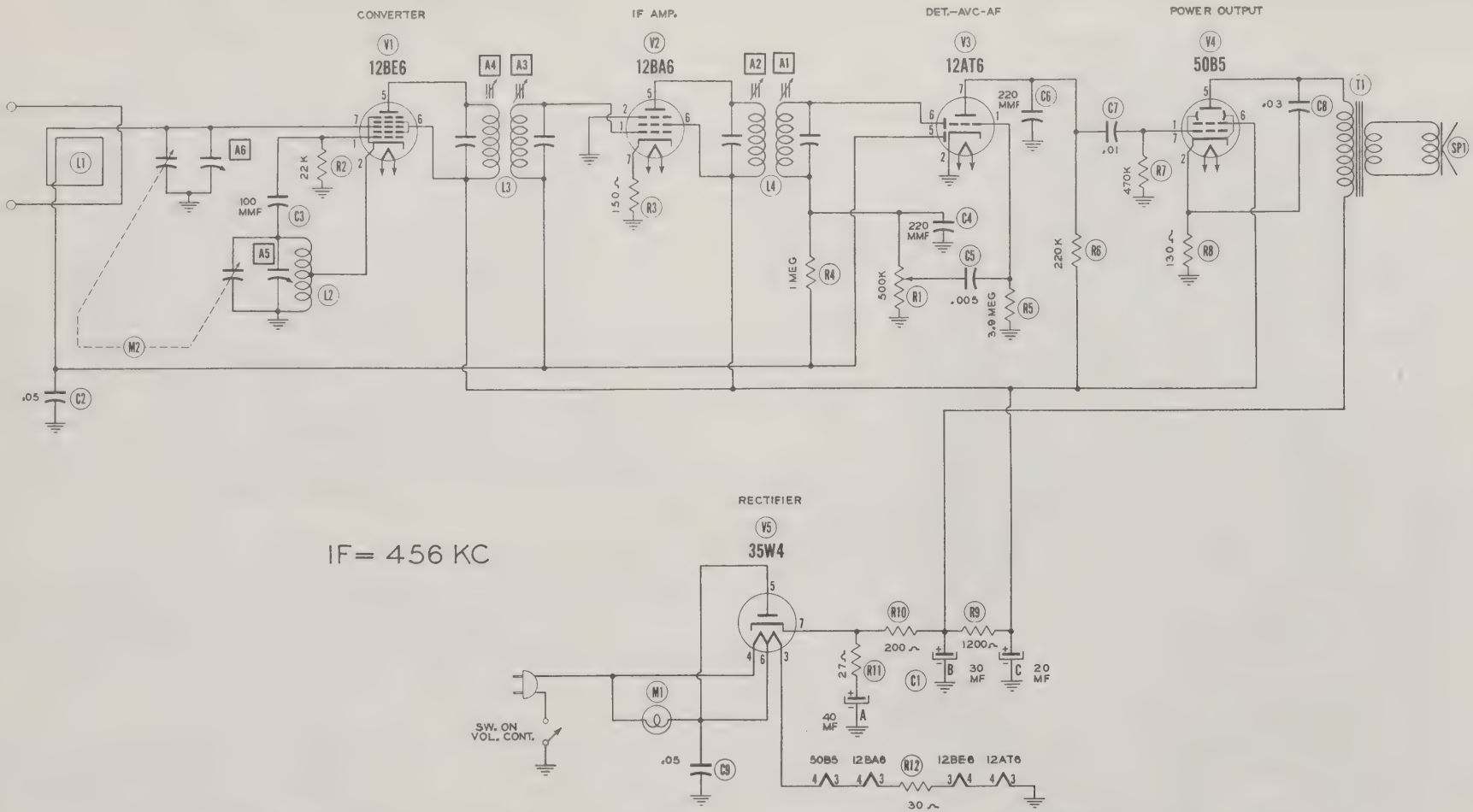
ITEM No.	PART NAME	FADA PART No.	NOTES
M2	2 Gang Var. Cap.	27.31	(20-457MMF, 28-204MMF)
	Dial Scale	77.133	
	Dial Pointer	77.145	
	Cabinet	97.139	State color
	Knobs	142.26	State color



CHASSIS—BOTTOM VIEW



FADA MODEL 830



VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V 1	12BE6	8-15VDC	0V.	24VAC	12VAC	85VDC	85VDC	-.3VDC
V 2	12BA6	-.3VDC	0V.	29VAC	42VAC	85VDC	85VDC	1.2VDC
V 3	12AT6	-.5VDC	0V.	0V.	12VAC	-.3VDC	-.3VDC	40VDC
V 4	50B5	.1VDC	4.2VDC	42VAC	90VAC	105VDC	85VDC	.1VDC
V 5	35W4	0V.	0V.	90VAC	117VAC	112VAC	112VAC	120VDC

‡ TAKEN WITH VACUUM TUBE VOLTMETER.

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V 1	12BE6	22KΩ	1Ω	24Ω	12Ω	†1.4KΩ	†1.4KΩ	1.5 Meg.
V 2	12BA6	1.5 Meg.	0Ω	54Ω	65Ω	†1.4KΩ	†1.4KΩ	150Ω
V 3	12AT6	3.9 Meg.	0Ω	0Ω	12Ω	1.5 Meg.	500KΩ	†220KΩ
V 4	50B5	470KΩ	130Ω	65Ω	110Ω	†420Ω	†1.4KΩ	470KΩ
V 5	35W4	0Ω	0Ω	110Ω	140Ω	135Ω	135Ω	1.8 Meg.

† MEASURED FROM PIN 7 OF V5.

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

FADA
MODEL 845

FADA
MODEL 845

FADA MODEL 845

TRADE NAME	Fada, Model 845
MANUFACTURER	Fada Radio and Electric Co., Inc., 525 Main St., Belleville, New Jersey
TYPE SET	AC-DC Operated Superheterodyne Receiver with Loop Antenna
TUBES (SIX)	Types 12BA6 RF Amp., 12BE6 Converter, 12BA6 IF Amp., 12AT6 DET-AVC-AF, 35B5 Power Output, 35W4 Rectifier
POWER SUPPLY	105-125 Volts AC — RATING .24 Amp. at 117 Volts AC
TUNING RANGE—BROADCAST	530-1680KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer turn tuning cap fully closed and set pointer parallel with base of dial.

Use isolation transformer if available. If not connect a .1MFD capacitor in series with low side of signal generator and chassis.

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.1MFD	High side to stator on rear section of tuning gang. Low side to chassis.	456KC (400 ∿ Mod.)	Tuning gang fully open	Across voice coil	A1, A2, A3, A4	Adjust for maximum output. If isolation transformer is not used, reduce dummy antenna to .001MFD to reduce hum modulation.
2.	.1MFD	"	"	"	"	A5	Adjust for MINIMUM output.
3.		Loop	1680KC	"	"	A6	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
4.		Loop	1500KC	Tune for max. output.	"	A7	"
5.		Loop	600KC	"	"		Check tracking. If necessary adjust slotted end plates of antenna section of tuning gang.

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PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: FADA PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
V1	RF Amp.	12BA6	12BA6	7BK	
V2	Converter	12BE6	12BE6	7CH	
V3	IF Amp.	12BA6	12BA6	7BK	
V4	DET.-AVC-AF	12AT6	12AT6	7BT	
V5	Power Output	35B5	35B5	7BZ	
V6	Rectifier	35W4	35W4	5BQ	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: FADA PART No.	AEROVOX PART No.	CENTRALAB PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	30	150	22.19	AF888D			EL-340	■ Filter
B	40	150						▲ Filter
C	20	150						Filter
C2	50		17.18	GP50M	D6-500	GP1K-50	1FM-45	RF Coupling
C3	100		17.21	GP100M	D6-101	GP1K-100	1FM-31	Osc. Grid Cap.
C4	.05	200	12.11	P288-05			TM-15	AVC Filter
C5	220		17.22	GP220M	D6-221	GP2K-220	1FM-325	Diode RF Filter
C6	.005	400	12.19	P688-005	D6-502	811-005	TM-25	Audio Coupling
C7	220		17.22	GP220M	D6-221	GP2K-220	1FM-325	AF Amp. Plate Bypass
C8	.01	400	12.6	P488-01	D6-103	821-01	TM-11	Audio Coupling
C9	.03	400	12.9	P488-03			TM-13	Output Plate Bypass
C10	.05	400	12.12	P488-05			TM-15	Line Filter

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: FADA PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	INSTALLATION NOTES
R1A	500KΩ	½	52.16	Q13-133	M-60-Z	B-60-S	Volume control
B	Switch		Not Req.	76-1	SW-A	Not Req.	Attach to R1A per instructions

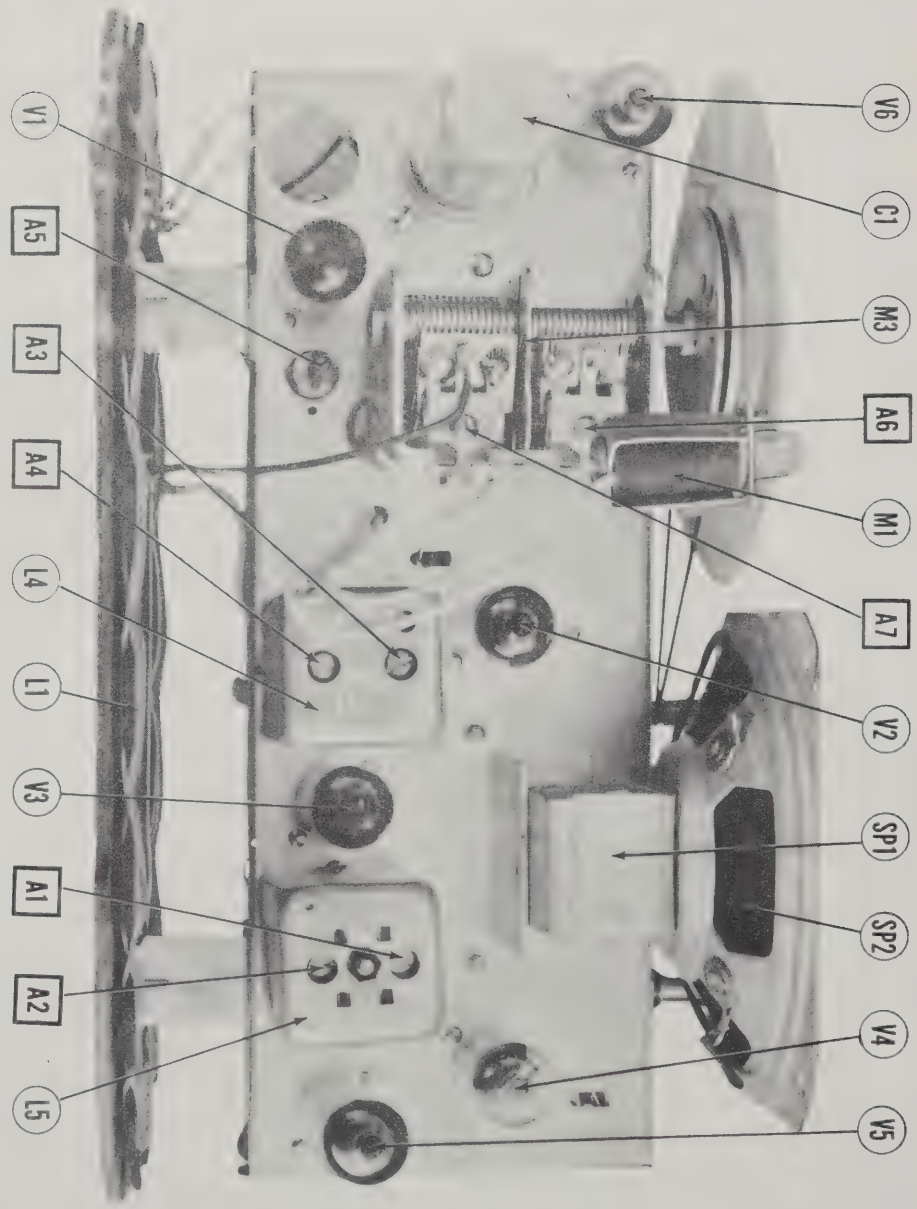
RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: FADA PART No.	IRC PART No.	IDENTIFICATION CODES
R2	150Ω	½	32.4	BW-½-150	RF Cathode
R3	6800Ω	½	32.10	BTS-6800	RF Plate
R4	100KΩ	½	32.89	BTS-100K	Conv. Grid
R5	22KΩ	½	32.13	BTS-22K	Osc. Grid
R6	150Ω	½	32.4	BW-½-150	IF Cathode
R7	1 Meg.	½	32.33	BTS-1 Meg.	AVC Network
R8	4.7 Meg.	½	32.98	BTS-4.7 Meg.	AF Amp. Grid
R9	220KΩ	½	32.91	BTS-220K	AF Amp. Plate
R10	470KΩ	½	32.92	BTS-470K	Output Grid
R11	150Ω	½	32.4	BW-½-150	Output Cathode
R12	1000Ω	1	32.41	BW-1-1000	Filter
R13	220Ω	1	32.159	BW-1-220	Filter
R14	27Ω	½	32.49		Surge Limiter
R15	30Ω	1	117.1		Filament Dropping-Wire Wound

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: FADA PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	INSTALLATION NOTES
T1	2.5KΩ	3.7Ω	230Ω	.6Ω	42.2	A-3876	A-2928	RO-2	

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA FADA PART No.	JENSEN PART No.	QUAM PART No	INSTALLATION NOTES
	FIELD	V. C. IMP.		ST-113 ②		① Use universal mounting bracket provided.
SP1	PM	3.7Ω	107.20	MOD. P4-X	4A07 ①	② Fabricate new mounting bracket.
	CONE DIA.	V. C. DIA.				
SP2	4"	9/16"				

R F COILS

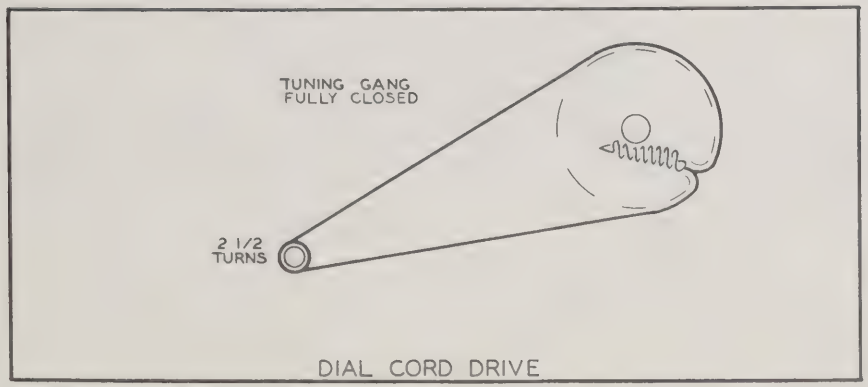
ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA FADA PART No.	REPLACEMENT DATA MEISSNER PART No.
L1	Loop Ant.	.1Ω	1.5Ω	37.64	
L2	Wave Trap	36Ω		37.66	
L3	Osc. Coil	6.5Ω		37.57	14-1073
L4	1st IF	30Ω	30Ω	37.61	16-6658
L5	2nd IF	26Ω	25Ω	37.33	16-6660

DIAL LIGHTS

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA FADA PART No.		NOTES
M1	Bayonet	3.2	.16	White	122.8		Type #1490
M2	Bayonet	3.2	.16	White	122.8		Type #1490

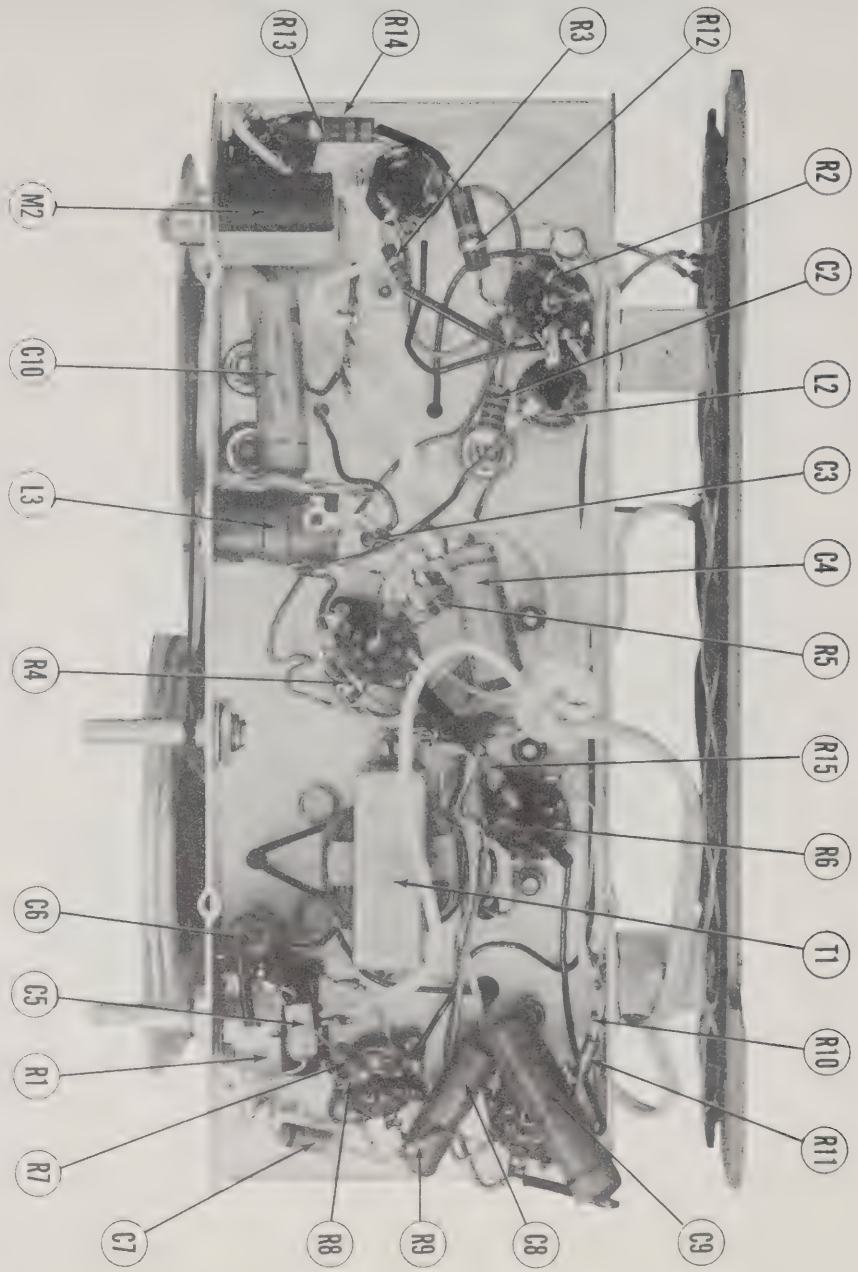
MISCELLANEOUS

ITEM No.	PART NAME	FADA PART No.	NOTES
M3	2 Gang Var. Cap.	27.18	(33-470MMF, 25-197MMF)
	Dial Scale	77.165	
	Dial Pointer	77.167	
	Cabinet	97.216	State color
	Knob	142.26	State color

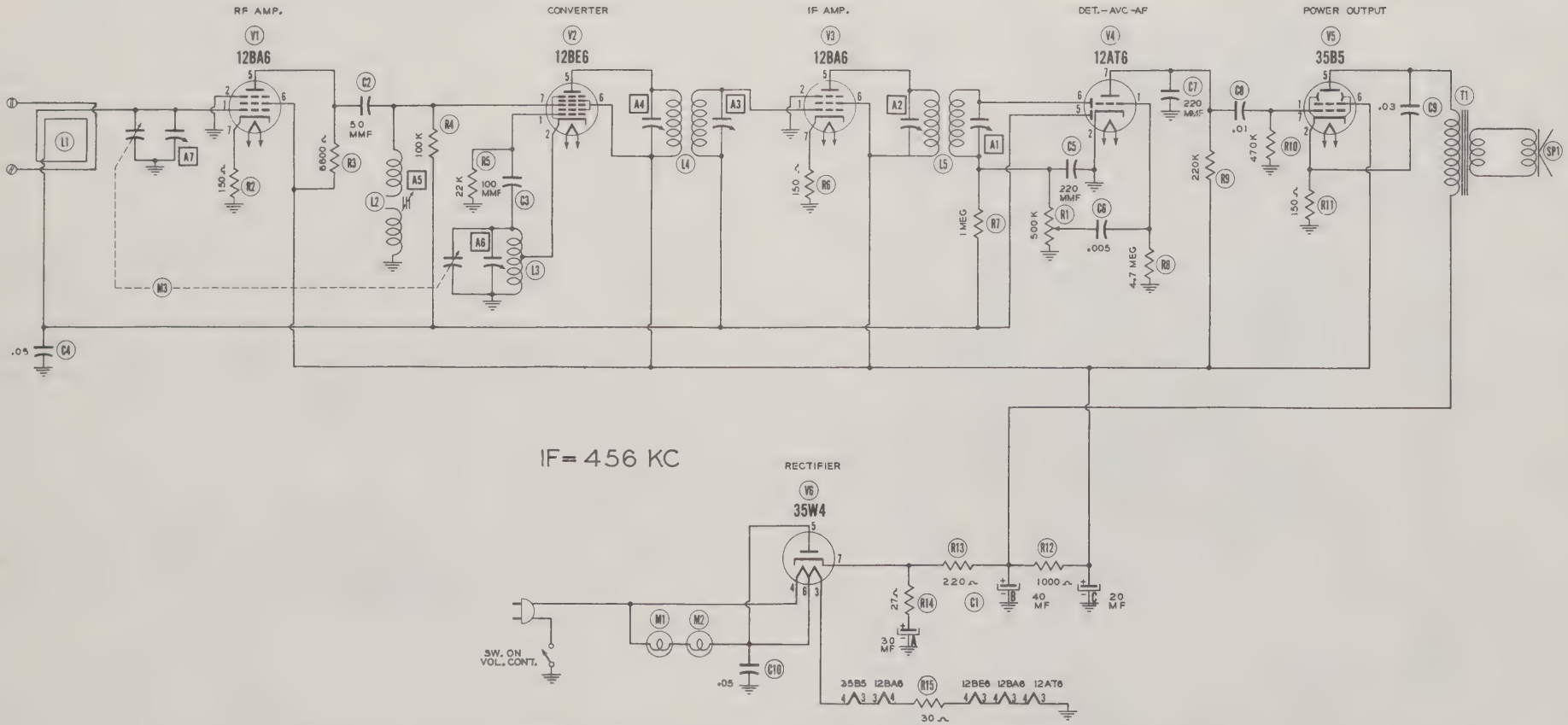


DIAL CORD DRIVE

CHASSIS—BOTTOM VIEW



FADA MODEL 845



VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V 1	12BA6	-.4VDC	0V.	13VAC	25VAC	50VDC	85VDC	1.1VDC
V 2	12BE6	§-10.7VDC	0V.	25VAC	38VAC	85VDC	85VDC	-.3VDC
V 3	12BA6	-.4VDC	0V.	50VAC	40VAC	85VDC	85VDC	1.1VDC
V 4	12AT6	-.6VDC	0V.	13VAC	0V.	-.4VDC	-.4VDC	41VDC
V 5	35B5	0V.	4.8VDC	50VAC	85VAC	100VDC	85VDC	0V.
V 6	35W4	0V.	0V.	85VAC	117VAC	112VAC	112VAC	120VDC

§ TAKEN WITH VACUUM TUBE VOLTMETER.

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V 1	12BA6	1.5 Meg.	0Ω	13Ω	25Ω	†8KΩ	†1.2KΩ	150Ω
V 2	12BE6	22KΩ	1Ω	25Ω	38Ω	†1.2KΩ	†1.2KΩ	1.6 Meg.
V 3	12BA6	1.5 Meg.	0Ω	80Ω	68Ω	†1.2KΩ	†1.2KΩ	150Ω
V 4	12AT6	4.7 Meg.	0Ω	0Ω	13Ω	1.5 Meg.	500KΩ	†220KΩ
V 5	35B5	470KΩ	150Ω	80Ω	115Ω	†450Ω	†1.2KΩ	470KΩ
V 6	35W4	Inf.	Inf.	115Ω	135Ω	130Ω	130Ω	150KΩ

† MEASURED FROM PIN 7 OF V6.

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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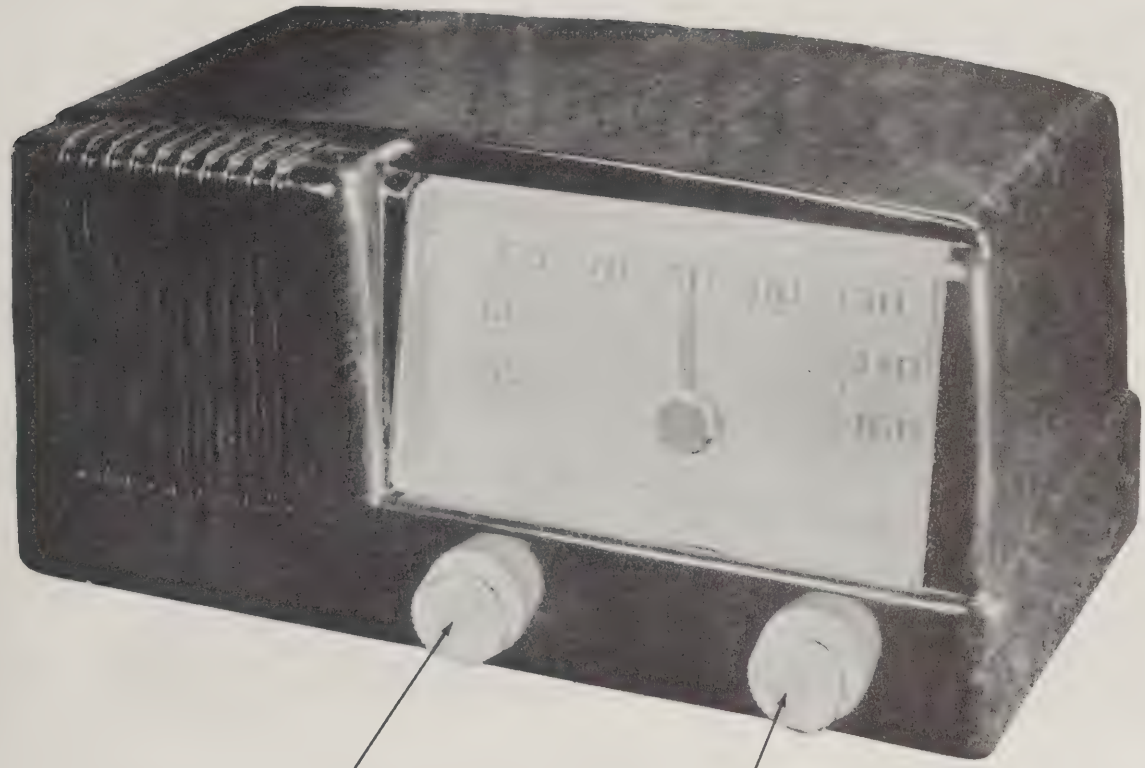
1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

GENERAL ELECTRIC
MODELS 123, 124



GENERAL ELECTRIC
MODELS 123, 124

TRADE NAME	General Electric, Models 123, 124
MANUFACTURER	General Electric Co., Electronics Dept., Electronics Park, Syracuse, New York
TYPE SET	AC-DC Operated Superheterodyne Receiver with Loop Antenna
TUBES (FIVE)	Types 12SA7 Converter, 12BA6 or 12SK7 IF Amp., 12SQ7 DET.-AVC-AF, 50C5 Power Output, 35W4 Rectifier.
POWER SUPPLY	105-125 Volts AC-DC — RATING .26 Amp. at 117 Volts AC
TUNING RANGE—BROADCAST	540-1600KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer turn tuning cap fully closed and set pointer to last reference mark at low frequency end of dial. Use isolation transformer if available. If not connect a .1MFD capacitor in series with low side of signal generator and B-. Loop should be maintained in same relative position to chassis as when receiver is in cabinet. Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.05MFD	High side to pin 8 (Grid) of 12SA7 (V1). Low side to B-.	455KC (400 ∿ Mod.)	Tuning gang fully open	Across voice coil	A1, A2, A3, A4	Adjust for maximum output. If isolation transformer is not used, reduce dummy antenna to .001MFD to reduce hum modulation.
2.		Loop	1620KC	"	"	A5	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
3.		Loop	1500KC	Tune for max. output.	"	A6	"

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PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA G. E. PART No.	REPLACEMENT DATA STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
V1	Converter	12SA7	12SA7	8R	
V2A	IF Amp.	12BA6	12BA6	7BK	
B	IF Amp.	12SK7	12SK7	8N	
V3	DET.-AVC-AF	12SQ7	12SQ7	8Q	
V4	Power Output	50C5	50C5	7CV	
V5	Rectifier	35W4	35W4	5BQ	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING CAP.	RATING VOLT	REPLACEMENT DATA G. E. PART No.	AEROVOX PART No.	CENTRALAB PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	50	150	RCE-046	PRSA150/40-40			TA-505	Filter-Red †
B	50	150						Filter-Red †
C2	.05	400	UCC-028	P488-05			TM-15	AVC Filter
C3	47	300	UCU-020	1468-00005	D6-470	GPlK-47	1FM-45	Osc. Grid Cap.
C4A	220		RCW-3025	GP220M	D6-221	GP2K-220	34C3	Diode RF Filter
B	2000			GP2000M	D6-202	GP2M-002		Audio Coupling
C	220			GP220M	D6-221	GP2K-220		AF Amp. Plate Bypass
D	5000			GP5000M	D6-502	811-005		Audio Coupling
C5	.02	600	UCC-041	P688-02			TM-12	Output Plate Bypass
C6	.05	400	UCC-028	P488-05			72P51	Line Isolation
C7	.05	600	UCC-045	P688-05			TM-15	Line Filter

† Some models use 30MFD in this application.

CONTROLS

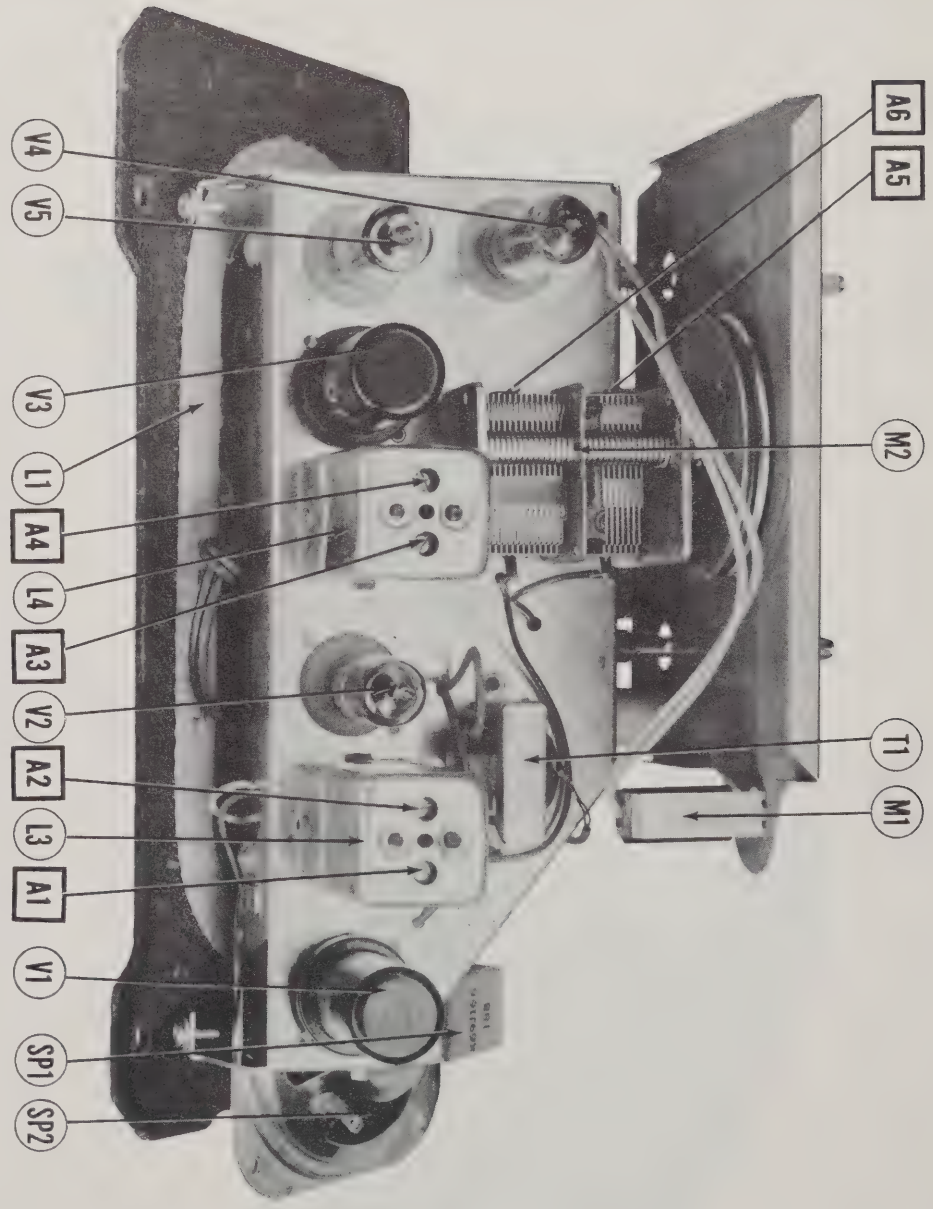
ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA G. E. PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	INSTALLATION NOTES
R1A	500KΩ	½	RRC-106	Q13-133	AM-60-Z	BSK-60-S	Volume control
B	Shaft		Not Req.	Not Req.	KSS-3	Not Req.	Attach to R1A per instructions
C	Switch		Not Req.	76-1	SW-A	Not Req.	Attach to R1A per instructions

RESISTORS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA G. E. PART No.	IRC PART No.	IDENTIFICATION CODES
R2	22KΩ	½	URD-081	BTS-22K	Osc. Grid
R3	2.2 Meg.	½	URD-129	BTS-2.2 Meg.	AVC Network
R4	4.7 Meg.	½	URD-127	BTS-4.7 Meg.	AF Amp. Grid
R5	47Ω*	½		BW-½-47	IF Cathode-See Note 1
R6	470KΩ	½	URD-113	BTS-470K	AF Amp. Plate
R7	1 Meg.	½		BTS-1 Meg.	Output Grid-See Note 2
R8	150Ω	½	URD-029	BW-½-150	Output Cathode
R9	1000Ω	2		BW-2-1000	Filter-See Note 3
R10	470KΩ	½	URD-113	BTS-470K	Isolation
R11	22Ω	½	URD-009		Surge Limiter

Note 1. Not used in all models.
Note 2. Some models use 470KΩ resistor in this application.
Note 3. Some models use 1500Ω resistor in this application.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		G. E.	STANCOR	MERIT	CHICAGO	
	PRI.	SEC.	PRI.	SEC.	PART No.	PART No.	PART No.	PART No.	
T1	2.1KΩ	3.5Ω	225Ω	.6Ω	RTO-069	A-3332	A-3025 #	RO-2 #	# Drill one new mounting hole.

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			G. E.	JENSEN	QUAM	
			PART No.	PART No.	PART No.	
	FIELD	V. C. IMP.		ST-113		
SP1	PM	3.5Ω	UOP-487	MOD. P4-X	4A07	
	CONE DIA.	V. C. DIA.				
SP2	3 7/8"	9/16"				

R F COILS

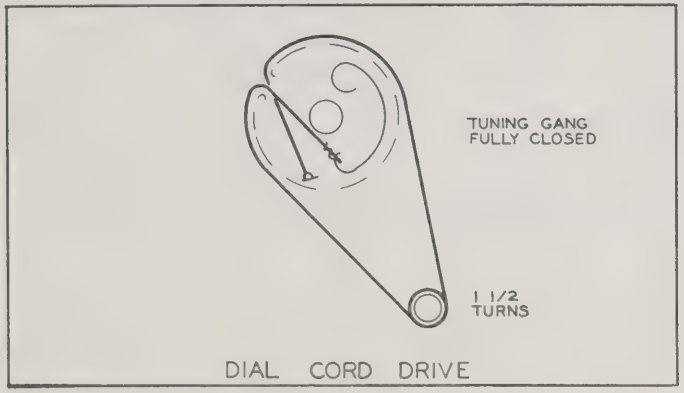
ITEM No.	USE	DC RES.		REPLACEMENT DATA		
		PRI.	SEC.	G. E. PART No.	MEISSNER PART No.	
L1	Loop Ant.	3.7Ω		RAB-095		Includes cabinet back
L2	Osc. Coil	.5Ω	7Ω	RLC-090	14-1073	
L3	1st IF	25.5Ω	25.5Ω	RTL-094	16-6658	
L4	2nd IF	25Ω	25Ω	RTL-095	16-6660	

DIAL LIGHTS

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		NOTES
					G. E. PART No.		
M1	Bayonet	7.5	.2	White			Type #51

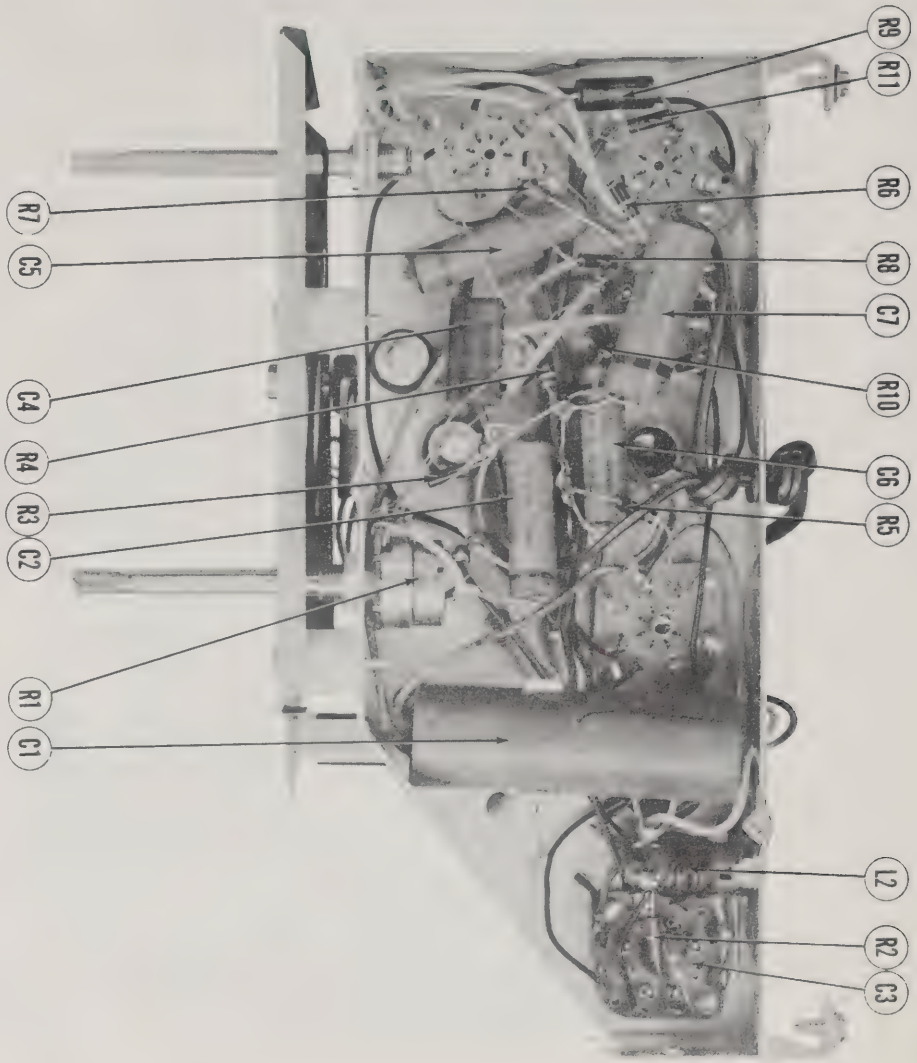
MISCELLANEOUS

ITEM No.	PART NAME	G. E. PART No.	NOTES
M2	2 Gang Var. Cap.	RCT-037	(18-462MMF, 22-162MMF)
	Dial Scale	RDS-083	
	Dial Pointer	RDP-048	
	Knob	RDK-175	Model 124
	Knob	RDK-174	Model 123
	Cabinet	RAU-037	Model 124 (Ivory)
	Cabinet	RAU-306	Model 123 (Brown)

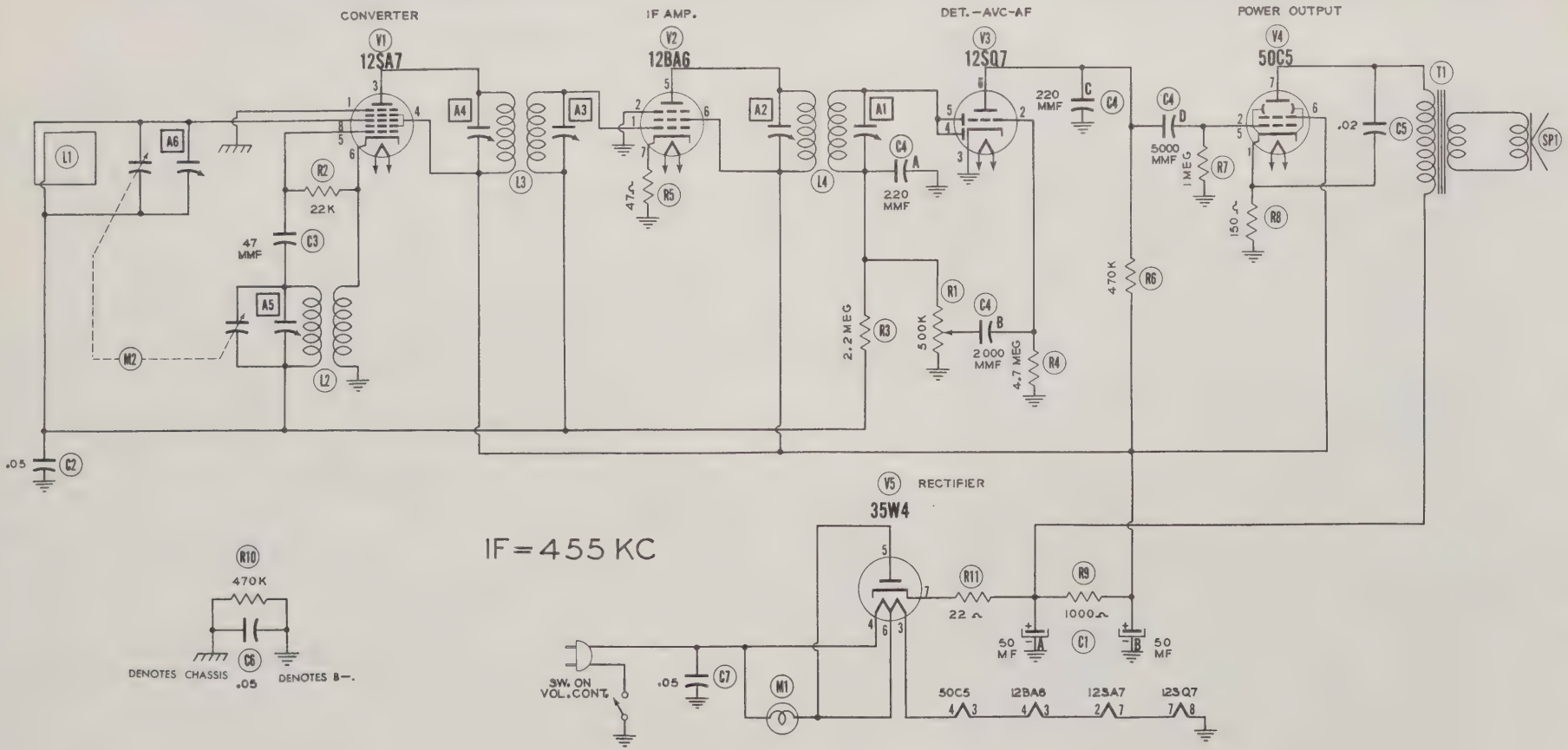


DIAL CORD DRIVE

CHASSIS—BOTTOM VIEW



GENERAL ELECTRIC
MODEL 123



VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	12SA7	0V.	24VAC	85VDC	85VDC	§-7.8VDC	0V.	12VAC	-.3VDC
V 2	12BA6	-.3VDC	0V.	24VAC	36VAC	85VDC	85VDC	.5VDC	
V 3	12SQ7	0V.	-.5VDC	0V.	-.5VDC	-.5VDC	50VDC	12VAC	0V.
V 4	50C5	5.6VDC	0V.	36VAC	86VAC	0V.	85VDC	105VDC	
V 5	35W4	115VDC	115VDC	86VAC	117VAC	112VAC	112VAC	115VDC	

§ TAKEN WITH VACUUM TUBE VOLTMETER.

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	12SA7	470KΩ	24Ω	†1000Ω	†1000Ω	22KΩ	.6Ω	12Ω	2.7 Meg.
V 2	12BA6	2.7 Meg.	0Ω	24Ω	36Ω	†1000Ω	†1000Ω	47Ω	
V 3	12SQ7	470KΩ	4.7 Meg.	0Ω	500KΩ	500KΩ	†470KΩ	12Ω	0Ω
V 4	50C5	150Ω	1 Meg.	36Ω	86Ω	1 Meg.	†1000Ω	†250Ω	
V 5	35W4	60KΩ	60KΩ	86Ω	107Ω	107Ω	107Ω	60KΩ	

† MEASURED FROM PIN 7 OF V5.

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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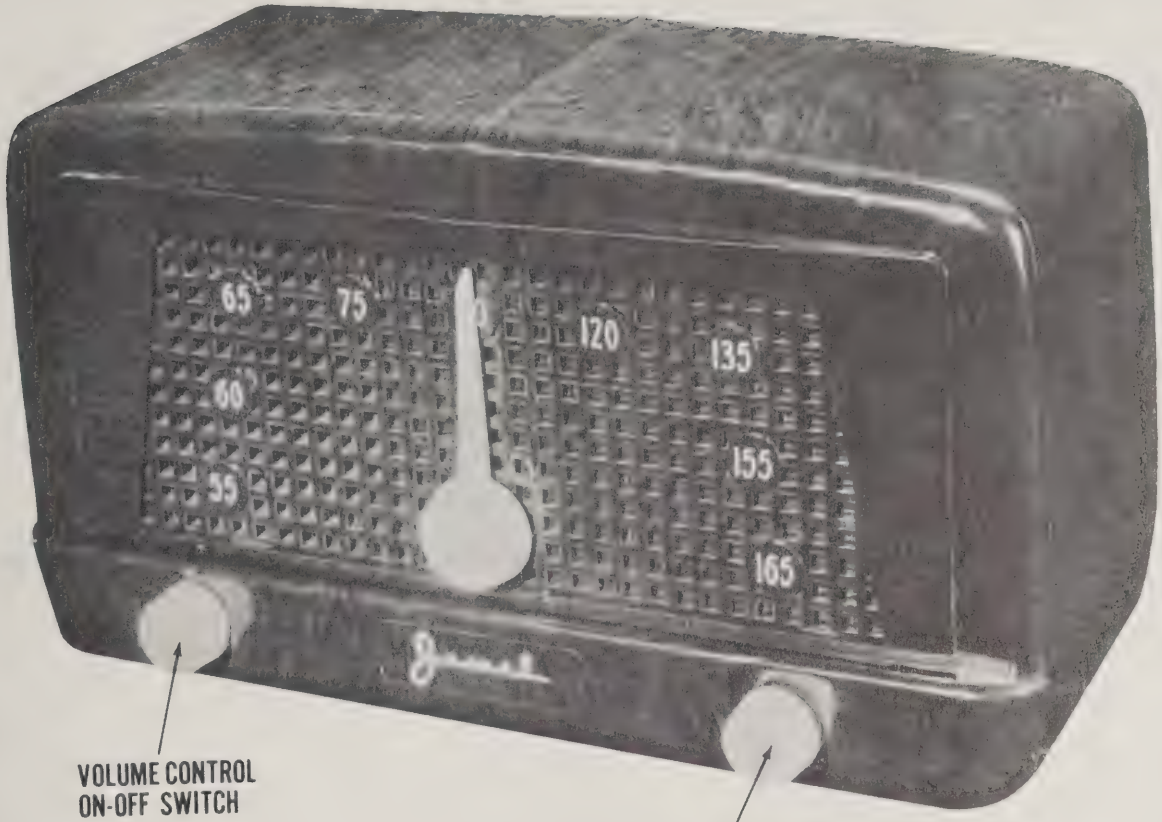
1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.



JEWEL
MODEL 960

JEWEL
MODEL 960

JEWEL MODEL 960

TRADE NAME	Jewel, Model 960
MANUFACTURER	Jewel Radio Corp., 10-40 5th Ave., Long Island City 1, New York
TYPE SET	AC-DC Operated Superheterodyne Receiver with Loop Antenna
TUBES (FIVE)	Types 12BE6 Converter, 12BA6 IF Amp., 12AT6 DET-AVC-AF, 50B5 Power Output, 35W4 Rectifier
POWER SUPPLY	110-120 Volts AC — RATING .26 Amp. at 117 Volts AC
TUNING RANGE—BROADCAST	540-1620KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Use isolation transformer if available. If not connect a .1MFD capacitor in series with low side of signal generator and B-. Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.1MFD	High side to pin 7 (Grid) of 12BE6 (V1). Low side to B-.	455KC (400 ∿ Mod.)	Tuning gang fully open	Across voice coil	A1, A2, A3, A4	Adjust for maximum output. If isolation transformer is not used reduce dummy antenna to .001MFD to reduce hum modulation.
2.		Loop	1620KC	"	"	A5	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
3.		Loop	1400KC	Tune for max. output.	"	A6	"

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PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RMA BASE TYPE	INSTALLATION NOTES
		JEWEL PART No.	STANDARD REPLACEMENT		
V1	Converter	12BE6	12BE6	7CH	
V2	IF Amp.	12BA6	12BA6	7BK	
V3	DET.-AVC-AF	12AT6	12AT6	7BT	
V4	Power Output	50B5	50B5	7BZ	
V5	Rectifier	35W4	35W4	5BQ	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA					IDENTIFICATION CODES AND INSTALLATION NOTES
	CAP.	VOLT	JEWEL PART No.	AEROVOX PART No.	CENTRALAB PART No.	ERIE PART No.	SPRAGUE PART No.	
C1A	40	150		PRSA888D			TA-304	Filter-Red
B	40	150						Filter-Blue
C	20	150						Filter-Yellow
C2	.05	200		P288-05			TM-15	AVC Filter
C3	.0005	600		1468-0005	D6-501	GP2K-500	TC-35	Diode RF Filter
C4	.004	400		P688-004	D6-472	GP2M-004	TM-24	Audio Coupling
C5	.0005	600		1468-0005	D6-501	GP2K-500	TC-35	AF Plate Bypass
C6	.01	600		P688-01	D6-103	811-01	TM-11	Audio Coupling
C7	.01	600		P688-01	D6-103	811-01	TM-11	Output Plate Bypass
C8	.05	400		P488-05			TM-15	Line Filter
C9	.2	400		P488-22			72P53	Line Isolation

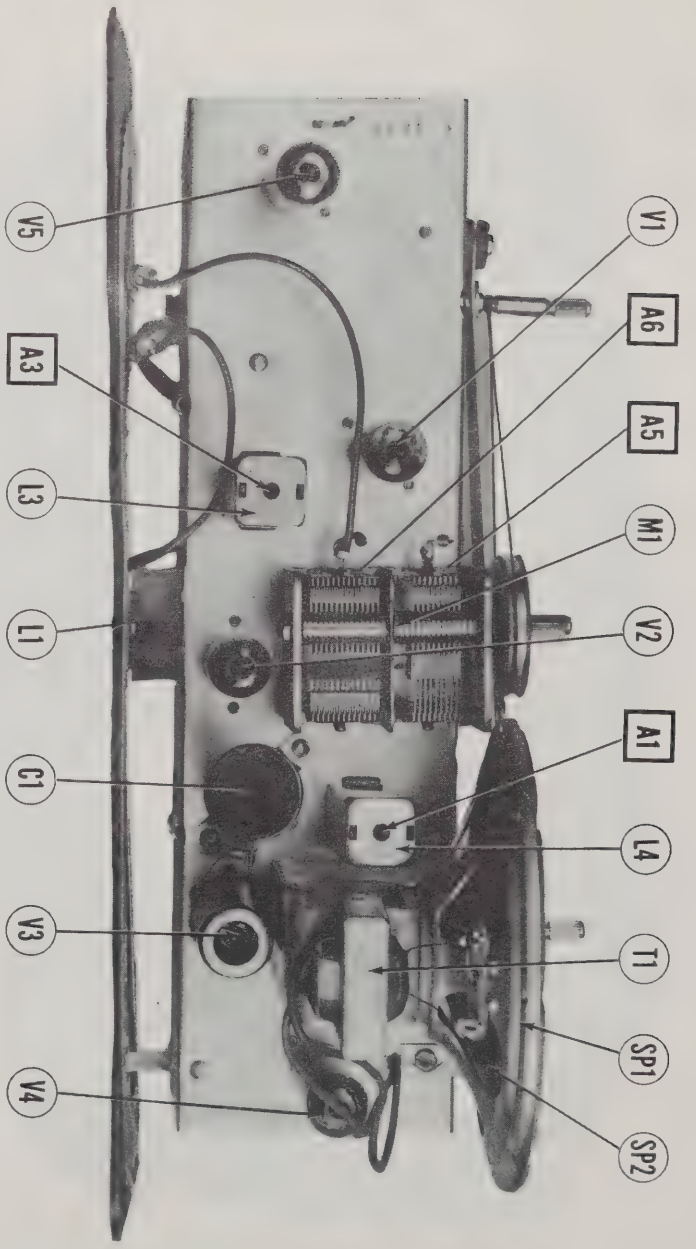
CONTROLS

ITEM No.	RATING		REPLACEMENT DATA				INSTALLATION NOTES
	RESIST-ANCE	WATTS	JEWEL PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	
R1A	500KΩ	½		Q13-133	AM-60-Z	BSK-60-S	Volume control
B	Shaft			Not Req.	KSS-3	Not Req.	Attach to R1A per instructions
C	Switch			76-1	SW-A	Not Req.	Attach to R1A per instructions

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	JEWEL PART No.	IRC PART No.	
R2	22KΩ	½		BTS-22K	Osc. Grid
R3	150Ω	½		BW-½-150	IF Cathode
R4	3.3 Meg.	½		BTS-3.3 Meg.	AVC Network
R5	10 Meg.	½		BTS-10 Meg.	AF Amp. Grid
R6	470KΩ	½		BTS-470K	AF Amp. Plate
R7	470KΩ	½		BTS-470K	Output Grid
R8	150Ω	½		BW-½-150	Output Cathode
R9	1500Ω	1		BW-1-1500	Filter
R10	100Ω	½		BW-½-100	Filter
R11	22Ω	½			Rect. Ballast

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		JEWEL PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
	PRI.	SEC.	PRI.	SEC.					
T1	3200Ω	3.5Ω	200Ω	.5Ω	Part of SP1	A-3332 ①	A-3025 ①	RO-6 ②	① Bend mounting tabs down and mount on original bracket. ② Fabricate new mounting bracket.

SPEAKER

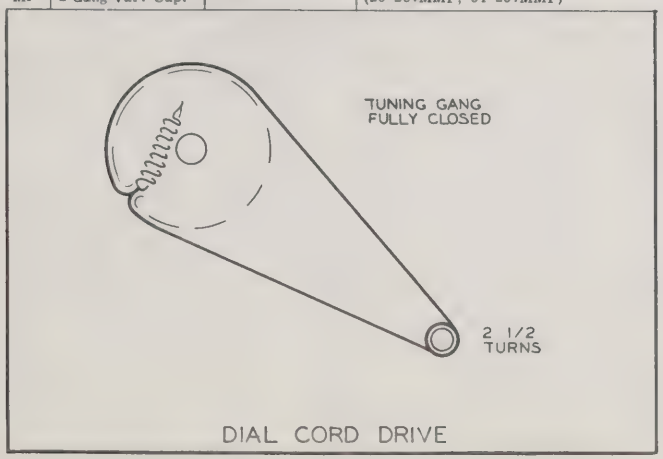
ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			JEWEL PART No.	JENSEN PART No.	QUAM PART No.	
SP1	FIELD	V. C. IMP.	80-20	ST-105 ③ MOD. P5-X	5A07 ③	③ Remount output transformer.
	PM	3.5Ω				
SP2	CONE DIA.	V. C. DIA.				
	4 5/8"	9/16"				

R F COILS

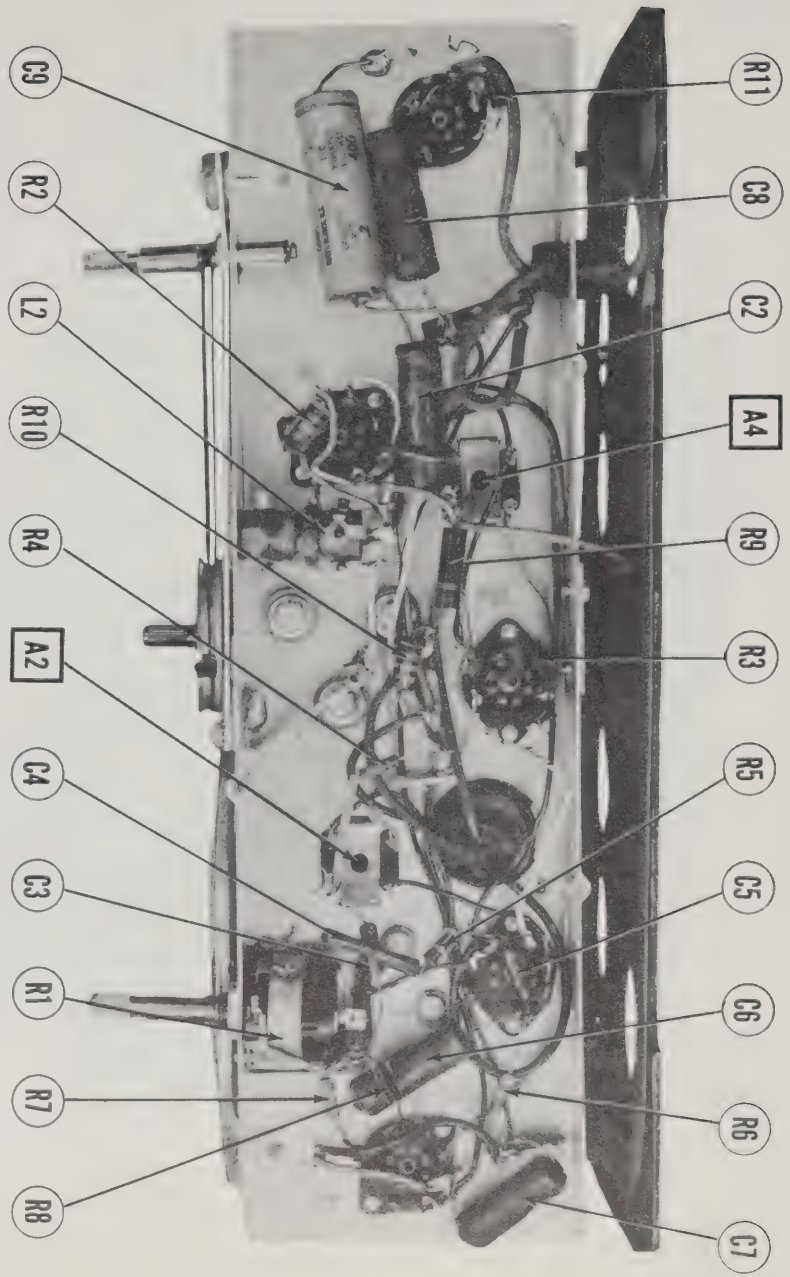
ITEM No.	USE	DC RES.		REPLACEMENT DATA		
		PRI.	SEC.	JEWEL PART No.	MEISSNER PART No.	
L1	Loop Ant.	2.4Ω				
L2	Osc. Coil	.5Ω	6.2Ω		14-1073	
L3	1st IF	18Ω	18Ω	61-11	16-6678	
L4	2nd IF	18Ω	18Ω	61-11	16-6678	

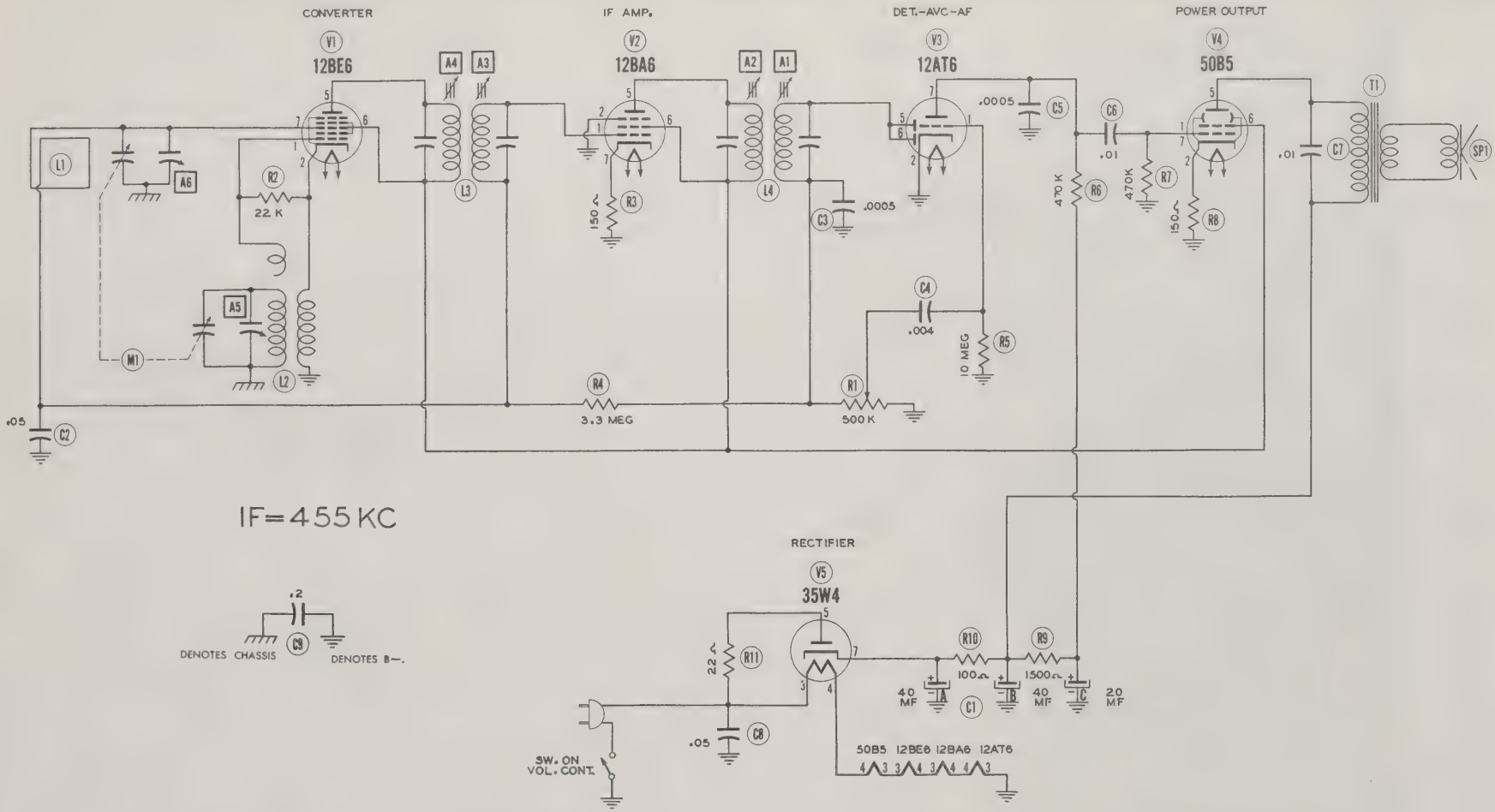
MISCELLANEOUS

ITEM No.	PART NAME	JEWEL PART No.	NOTES
M1	2 Gang Var. Cap.		(25-267MMF, 34-237MMF)



CHASSIS—BOTTOM VIEW





VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V 1	12BE6	§-10.3VDC	0V.	36VAC	24VAC	90VDC	90VDC	-.1VDC
V 2	12BA6	-.1VDC	0V.	24VAC	12VAC	90VDC	90VDC	1.2VDC
V 3	12AT6	-.5VDC	0V.	0V.	12VAC	-.4VDC	-.4VDC	37VDC
V 4	50B5	.1VDC	5.2VDC	36VAC	80VAC	115VDC	90VDC	.1VDC
V 5	35W4	117VAC	0V.	117VAC	80VAC	115VAC	87VAC	130VDC

§ TAKEN WITH VACUUM TUBE VOLTMETER.

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V 1	12BE6	22KΩ	.5Ω	38Ω	25Ω	†1.6KΩ	†1.6KΩ	3.8 Meg.
V 2	12BA6	3.8 Meg.	0Ω	25Ω	14Ω	†1.6KΩ	†1.6KΩ	150Ω
V 3	12AT6	10 Meg.	0Ω	0Ω	14Ω	500KΩ	500KΩ	†470KΩ
V 4	50B5	470KΩ	150Ω	38Ω	90Ω	†300Ω	†1.6KΩ	470KΩ
V 5	35W4	120Ω	Inf.	120Ω	90Ω	140Ω	95Ω	125KΩ

† MEASURED FROM PIN 7 OF V5.

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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97-8

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of + 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

MOTOROLA
MODELS 59H11U, 59H12IU

MOTOROLA
MODELS 59H11U, 59H12IU

MOTOROLA MODEL 59H11U

TRADE NAME	Motorola Models 59H11U, 59H12IU (Ch. HS-210)
MANUFACTURER	Motorola Inc., 4545 Augusta Blvd., Chicago, Illinois
TYPE SET	AC-DC Operated Superheterodyne Receiver with Loop Antenna
TUBES (FIVE)	Types 12BE6 Converter, 12BA6 IF Amp., 12AT6 DET-AVC-AF, 50C5 Power Output, 35W4 Rectifier
POWER SUPPLY	110-120 Volts AC-DC — RATING .26 Amp. at 117 Volts AC
TUNING RANGE—BROADCAST	535-1620KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer turn tuning cap fully closed and set pointer to last reference mark at low frequency end of dial. Use isolation transformer if available. If not connect a .1MFD capacitor in series with low side of signal generator and B-. Loop should be maintained in same relative position to chassis as when receiver is in cabinet. Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.1MFD	High side to stator on rear section of tuning gang. Low side to B-.	455KC (400 ∿ Mod.)	Tuning gang fully open	Across voice coil	A1, A2, A3, A4	Adjust for maximum output. If isolation transformer is not used, reduce dummy antenna to .001MFD to reduce hum modulation.
2.		Loop	1620KC	"	"	A5	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
3.		Loop	1400KC	Tune for max. output.	"	A6	"

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PARTS LIST AND DESCRIPTIONS

MOTOROLA MODEL 59H11U

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RMA BASE TYPE	INSTALLATION NOTES
		MOTOROLA PART No.	STANDARD REPLACEMENT		
V1	Converter	12BE6	12BE6	7CH	
V2	IF Amp.	12BA6	12BA6	7BK	
V3	DET-AVC-AF	12AT6	12AT6	7BT	
V4	Power Output	50C5	50C5	7CV	
V5	Rectifier	35W4	35W4	5BQ	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA					IDENTIFICATION CODES AND INSTALLATION NOTES
	CAP.	VOLT	MOTOROLA PART No.	AEROVOX PART No.	CENTRALAB PART No.	ERIE PART No.	SPRAGUE PART No.	
C1A	50	150	23K482857	PRSA150/50-30			TA-530	Filter-Red
B	30	150						Filter-Green
C2	.05	200	8R9821	P288-05			TM-15	AVC Filter
C3A	220		21B482847	GP220M	D6-221	GP2K-220		Diode RF Filter
B	2000			GP2000M	D6-202	GP2M-002	34C3	Audio Coupling
C	220			GP220M	D6-221	GP2K-220		AF Amp. Plate Bypass
D	5000			GP5000M	D6-502	811-005		Audio Coupling
C4	.02	400	8R9802	P488-02			TM-12	Output Plate Bypass
C5	.15	200	8K72686	P288-15			72P52	Line Isolation-See Note
C6	.05	600	8R9816	P688-05			TM-15	Line Filter

Note. Not used in all models.

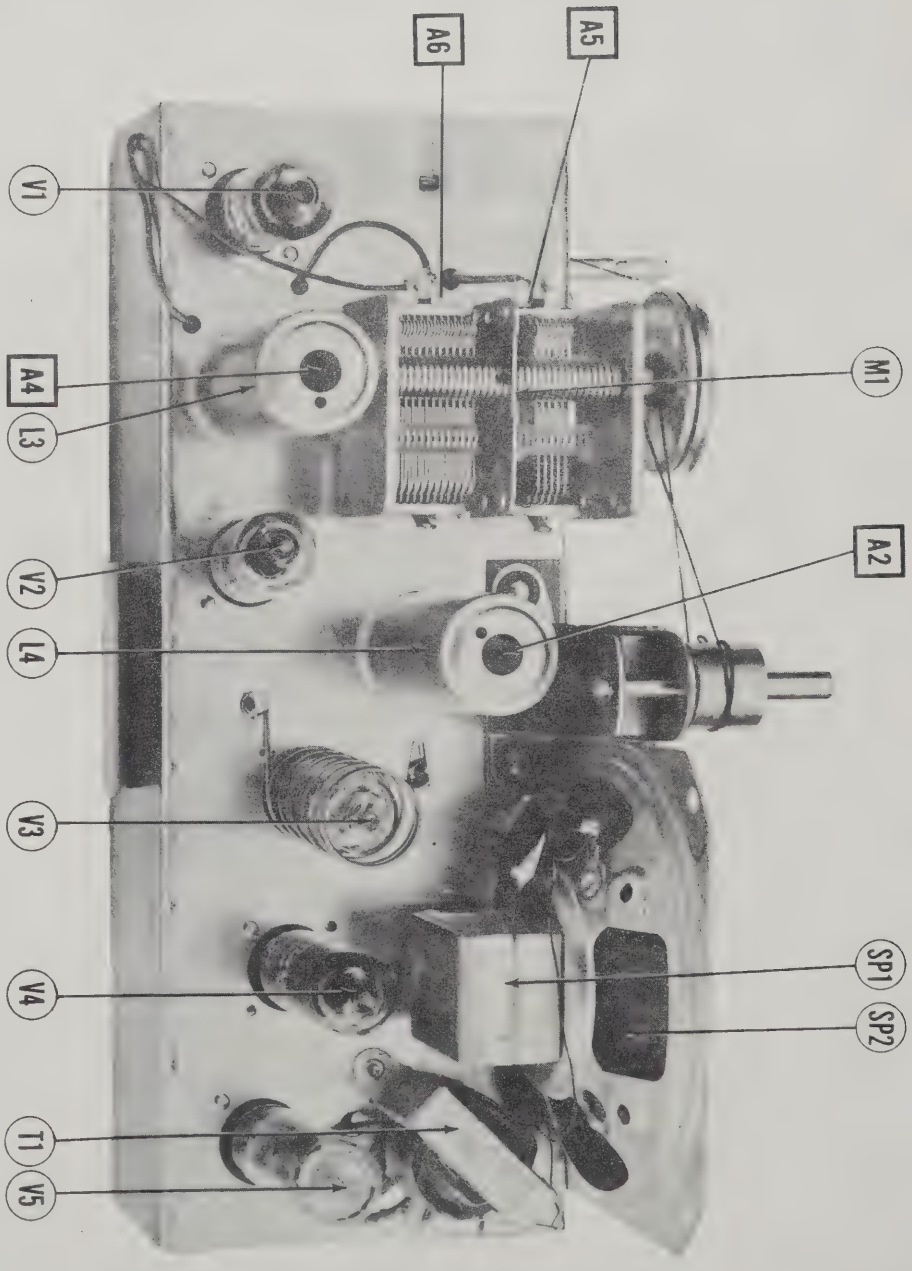
CONTROLS

ITEM No.	RATING		REPLACEMENT DATA				INSTALLATION NOTES
	RESISTANCE	WATTS	MOTOROLA PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	
R1A	1 Meg.	½	18A70032	Q13-137	AM-63-Z	BSK-70-S	Volume control
B	Shaft		Not Req.	Not Req.	KSS-3	Not Req.	Attach to R1A per instructions
C	Switch		Not Req.	76-1	SW-A	Not Req.	Attach to R1A per instructions

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	MOTOROLA PART No.	IRC PART No.	
R2	22KΩ	½	6R6028	BTS-22K	Osc. Grid
R3	100Ω	½	6R6018	BW-½-100	IF Cathode
R4	3.3 Meg.	½	6R2118	BTS-3.3 Meg.	AVC Network
R5	10 Meg.	½	6R2109	BTS-10 Meg.	AF Amp. Grid
R6	470KΩ	½	6R6032	BTS-470K	AF Amp. Plate
R7	470KΩ	½	6R6032	BTS-470K	Output Grid
R8	150Ω	½	6R3992	BW-½-150	Output Cathode
R9	1000Ω	1	6R3953	BW-1-1000	Filter
R10	27Ω	½	6R5683		Surge Limiter

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		MOTOROLA PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
	PRI.	SEC.	PRI.	SEC.					
T1	2.2KΩ	3.1Ω	170Ω	.4Ω	25K485973	A-3876 *	A-3025 *	RO-2 *	* Drill one new mounting hole.

SPEAKER

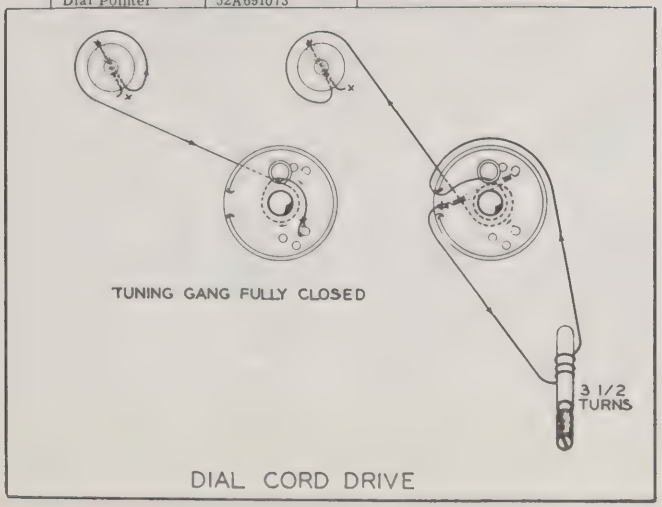
ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			MOTOROLA PART No.	JENSEN PART No.	QUAM PART No.	
	FIELD	V. C. IMP.		ST-113		
SP1	PM	3.1Ω	50C478138	MOD. P4-X	4A07	
	CONE DIA.	V. C. DIA.				
SP2	4"	9/16"				

R F COILS

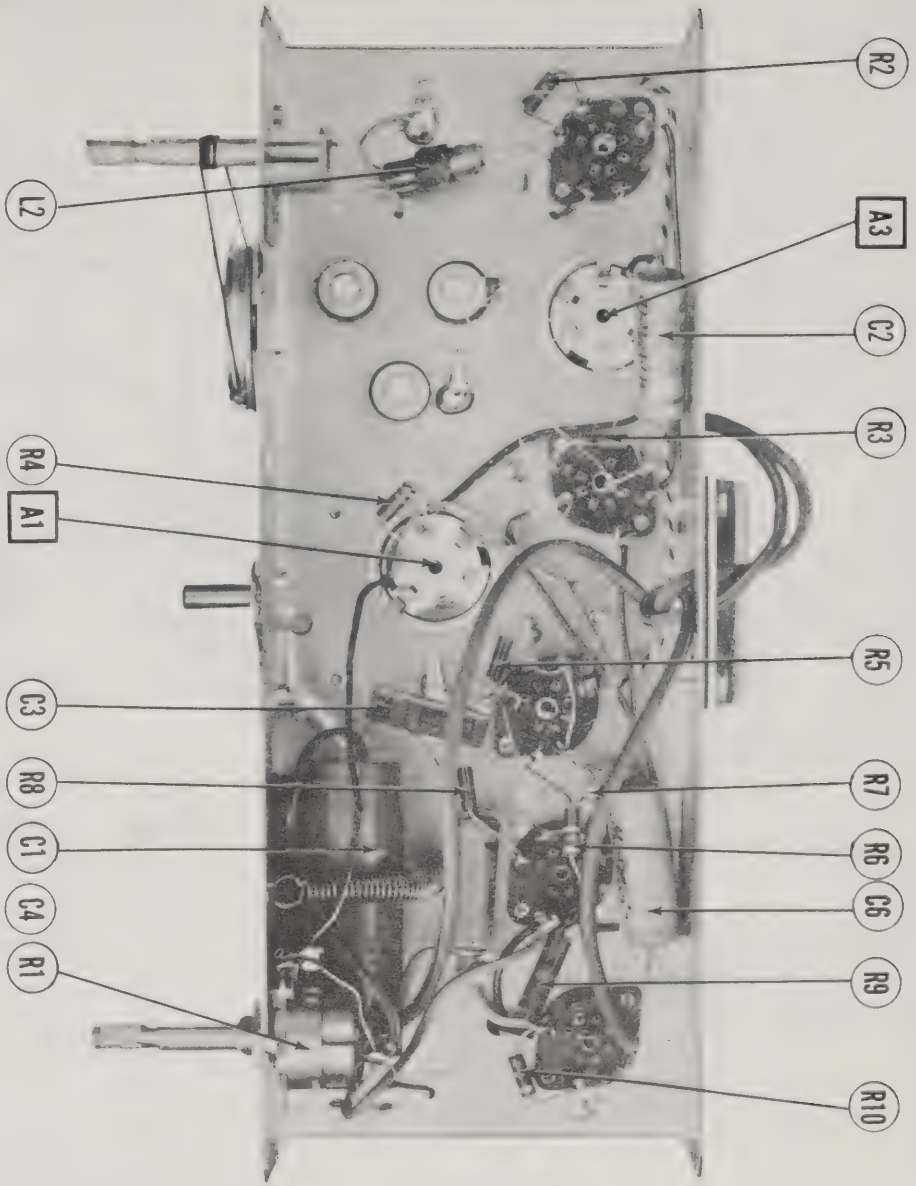
ITEM No.	USE	DC RES.		REPLACEMENT DATA		
		PRI.	SEC.	MOTOROLA PART No.	MEISSNER PART No.	
L1	Loop Ant.	3.8Ω		24C691086		Includes cabinet back.
L2	Osc. Coil	1Ω	13Ω	24K690762	14-1073	
L3	1st IF	14Ω	14Ω	24B482863	16-6678	
L4	2nd IF	14Ω	14Ω	24B482865	16-6678	

MISCELLANEOUS

ITEM No.	PART NAME	MOTOROLA PART No.	NOTES
M1	2 Gang Var. Cap.	1X690702	(21-397MMF, 13-105MMF)
	Cabinet	16E691141	Model 59H11U
	Cabinet	16E691142	Model 59H12IU
	Knob	36K691121	Model 59H11U
	Knob	36K691122	Model 59H12IU
	Dial Pointer	52A691073	

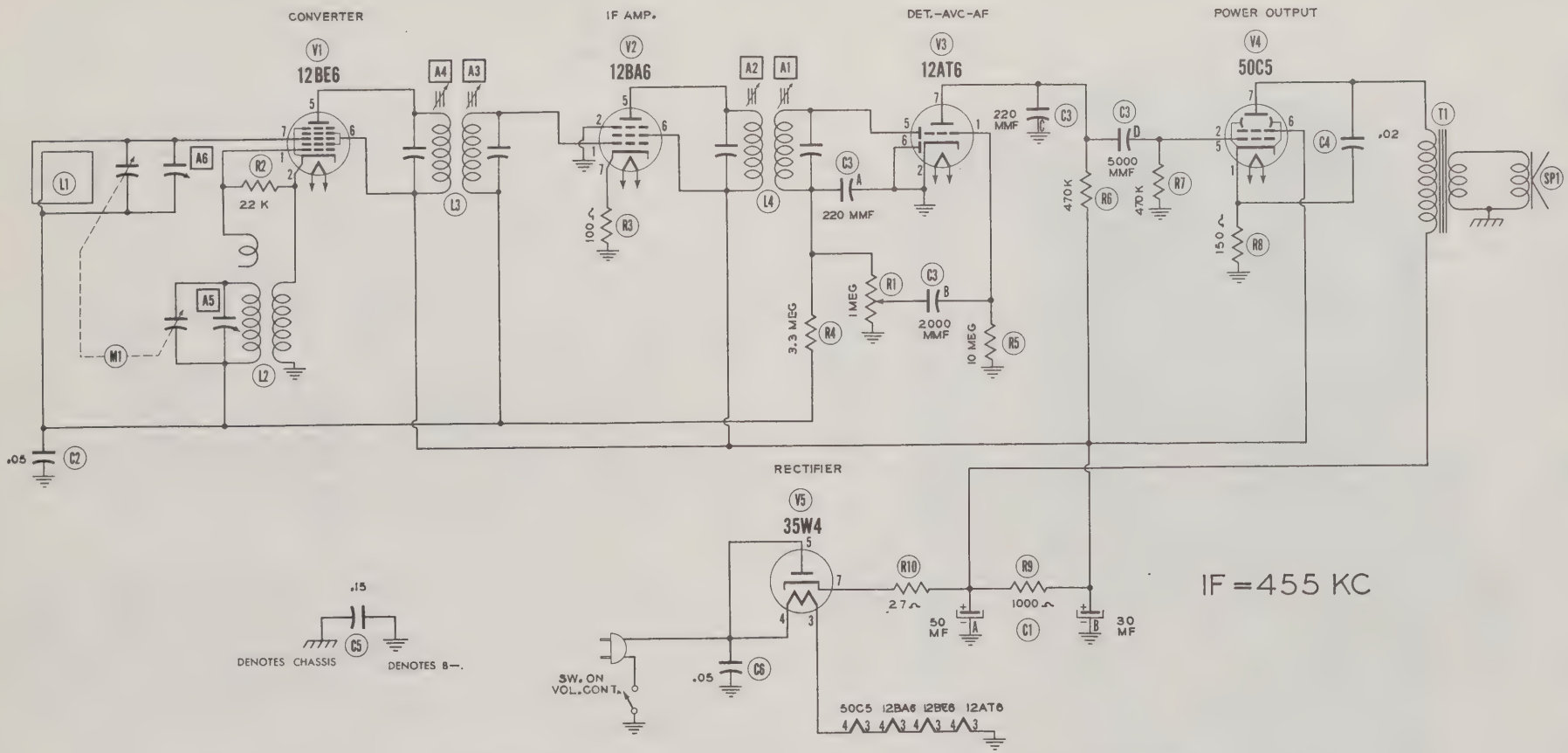


CHASSIS—BOTTOM VIEW



MOTOROLA MODEL 59H11U

MOTOROLA MODEL 59H11U



IF = 455 KC

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V 1	12BE6	§-8.9VDC	0V.	13VAC	25VAC	100VDC	100VDC	-.2VDC
V 2	12BA6	-.2VDC	0V.	25VAC	38VAC	100VDC	100VDC	1 VDC
V 3	12AT6	-.5VDC	0V.	0V.	13VAC	-1.1VDC	0V.	48VDC
V 4	50C5	6.3VDC	0V.	38VAC	88VAC	0V.	100VDC	115VDC
V 5	35W4	120VDC	0V.	88VAC	117VAC	117VAC	110VAC	120VDC

§ TAKEN WITH VACUUM TUBE VOLTMETER.

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V 1	12BE6	22KΩ	1Ω	13Ω	25Ω	†1000Ω	†1000Ω	4.3 Meg.
V 2	12BA6	4.3 Meg.	0Ω	25Ω	38Ω	†1000Ω	†1000Ω	100Ω
V 3	12AT6	10 Meg.	0Ω	0Ω	13Ω	1 Meg.	0Ω	†470KΩ
V 4	50C5	150Ω	470KΩ	38Ω	88Ω	470KΩ	†1000Ω	†200Ω
V 5	35W4	65KΩ	Inf.	88Ω	117Ω	117Ω	110Ω	65KΩ

† MEASURED FROM PIN 7 OF V5.

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

MOTOROLA MODEL 600

TRADE NAME	Motorola, Model 600
MANUFACTURER	Motorola Inc., 4545 Augusta Blvd., Chicago 51, Illinois
TYPE SET	Battery Operated Universal Automotive Superheterodyne Receiver
TUBES (SIX)	Types 6BA6 RF Amp., 6BE6 Converter, 6BA6 IF Amp., 6AT6 DET-AVC-AF, 6AQ5 Power Output, 6X4 Rectifier
POWER SUPPLY	6 Volt Storage Battery — RATING 5.9 Amp. at 6 Volts DC
TUNING RANGE—BROADCAST	535-1600KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

A special alignment wrench is required for adjusting the tuning cores (Motorola Part No. 66A76278).

Avoid any inward pressure on the cores during adjustment.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.1MFD	High side to pin 7 (Grid) of 6BE6 (V2). Low side to chassis.	455KC (400 ∿ Mod.)	Tuning cores fully out	Across voice coil	A1, A2, A3, A4	Adjust for maximum output.
2.	See Fig 1	High side thru dummy to antenna connector. Low side to chassis.	1610KC	"	"	A5, A6, A7	Check cores to see that they project 1 1/8" out of the coils. Adjust for maximum output.
3.	See Fig 1	"	1425KC	Tune for max. output.	"	A8, A9, A10	Adjust for maximum output.

After set is installed, fully extend antenna and tune in a weak station near 1400KC. Adjust A7 for maximum volume.

METAL SHIELD CAN MUST BE ATTACHED TO PLUG

FIG. 1

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PARTS LIST AND DESCRIPTIONS

MOTOROLA MODEL 600

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: MOTOROLA PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
V1	RF Amp.	6BA6	6BA6	7BK	
V2	Converter	6BE6	6BE6	7CH	
V3	IF Amp.	6BA6	6BA6	7BK	
V4	DET-AVC-AF	6AT6	6AT6	7BT	
V5	Power Output	6AQ5	6AQ5	7BZ	
V6	Rectifier	6X4	6X4	5BS	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: MOTOROLA PART No.	AEROVOX PART No.	CENTRALAB PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	15	350	23A485677	AFH32H4A			EL-153	■ Filter
B	10	350						▲ Filter
C	20	25						Output Cathode Bypass
C2	90		21A591682					Fixed Trimmer
C3	.006	100	8C4529	P488-006	D6-562	GP2M-0056	TM-26	RF Coupling
C4	.05	100	8R13514	P288-05			TM-15	AVC Filter
C5	.1	400	8R13166	P488-1			TM-1	Decoupling
C6	5		21K70720	GP5K	D2-4.7	NPOK-5	MS-55	RF Coupling
C7	50	300	21R6513	GP50K	D6-500	GP1K-50	1FM-45	Osc. Grid Cap.
C8	5		21K70720	GP5K	D2-4.7	NPOK-5	MS-55	IF Coupling
C9	100		21B77562	GP100M	D6-101	GP1K-100	1FM-31	Diode RF Filter
C10	100		21B77562	GP100M	D6-101	GP1K-100	1FM-31	Diode RF Filter
C11	.05	100	8R13514	P288-05			TM-15	Audio Coupling
C12	.03	400	8R71911	P488-03			TM-13	Audio Coupling
C13	1000		21K478410	GP1000M	D6-102	GP2L-001	1FM-21	Output Grid Bypass
C14	.01	400	8R23690	P488-01	D6-103	821-01	TM-11	Output Plate Bypass
C15	.02	1000	8R490449	P1088-02			MB-12	Buffer
C16	.5	100	8K17028	P288-5			68P20	Hash Filter
C17	.5	100	8K17028	P288-5			68P20	Hash Filter

CONTROLS

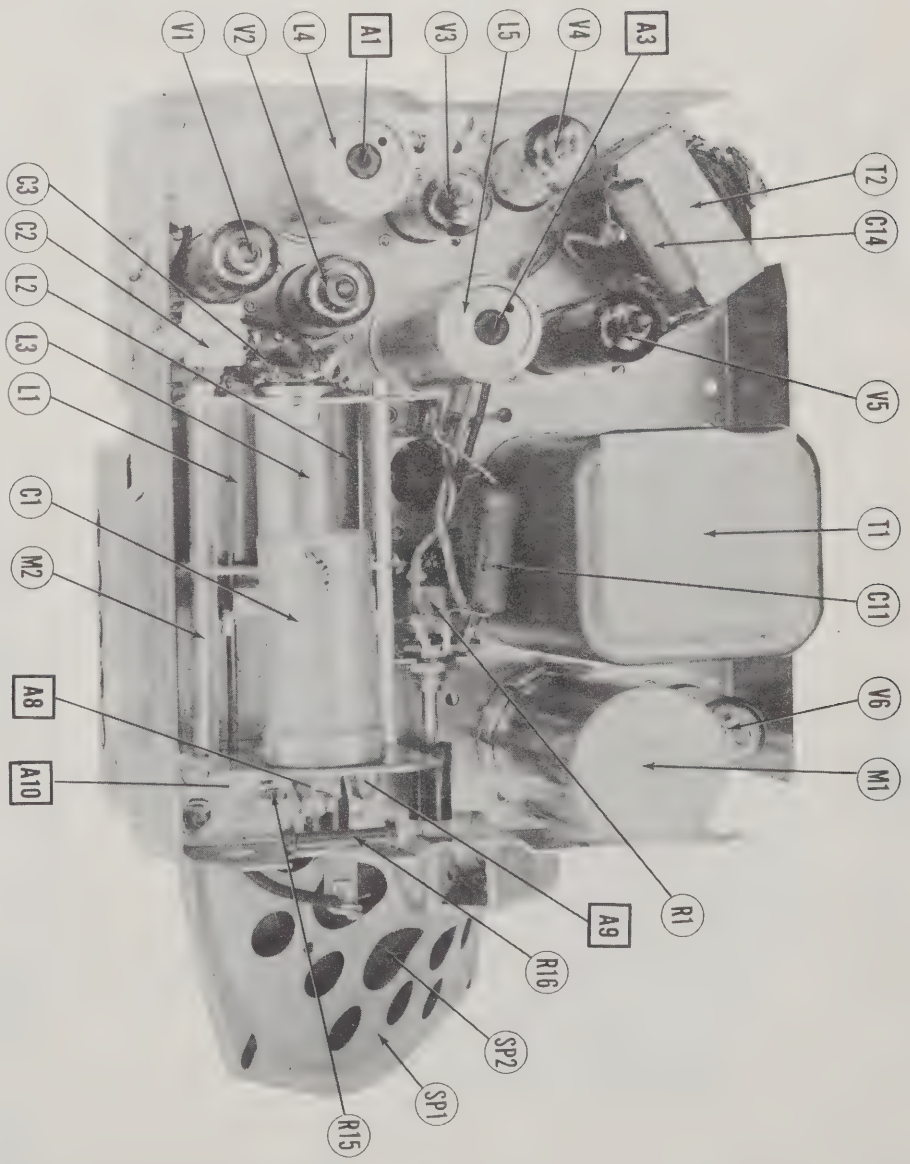
ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: MOTOROLA PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	INSTALLATION NOTES
R1	500KΩ	½	1A472531				Volume control and switch

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: MOTOROLA PART No.	IRC PART No.	IDENTIFICATION CODES
R2	470KΩ	½	6R6032	BTS-470K	RF Grid
R3	270Ω	½	6R6432	BW-½-270	RF Cathode
R4	100KΩ	½	6R6075	BTS-100K	Conv. Grid
R5	47KΩ	½	6R6056	BTS-47K	Osc. Grid
R6	330Ω	½		BW-½-330	IF Cathode-See Note
R7	6800Ω	1	6R6287	BTA-6800	Decoupling
R8	1 Meg.	½	6R6004	BTS-1 Meg.	AVC Network
R9	47KΩ	½	6R6056	BTS-47K	Diode Filter
R10	1 Meg.	½	6R6004	BTS-1 Meg.	Diode Filter
R11	2700Ω	½	6R5577	BTS-2700	AF Amp. Cathode
R12	3.3 Meg.	½	6R2118	BTS-3.3 Meg.	AF Amp. Grid
R13	470KΩ	½	6R6032	BTS-470K	AF Amp. Plate
R14	220KΩ	½	6R6015	BTS-220K	Output Grid
R15	270Ω	1	6R6336	BW-1-270	Output Cathode
R16	1000Ω	1	6R6184	BW-1-1000	Filter
R17	56Ω	½	6R5614	BW-½-56	Hash Suppression
R18	56Ω	½	6R5614	BW-½-56	Hash Suppression

Note. Some models use 470Ω resistor in this application.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (VIBRATOR)

ITEM No.	RATING				REPLACEMENT DATA			
	PRI.	SEC. 1	SEC. 2	SEC. 3	MOTOROLA PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.
T1	5.7VDC @ 3.4A	540VCT .050ADC			25B472533	P-4062 ①	P-2972 ①	VT-3 ①

① Drill new mounting holes.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		MOTOROLA PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
	PRI.	SEC.	PRI.	SEC.					
T2	5.5KΩ	3.4Ω	500Ω	.4Ω	25B70177	A-2930	A-3877	RO-8	

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			MOTOROLA PART No.	JENSEN PART No.	QUAM PART No.	
	FIELD	V. C. IMP.		ST-108		
SP1	PM	3.4Ω	50B592352	MOD. P6-X	6A1	
	CONE DIA.	V. C. DIA.				
SP2	6"	9/16"				

R F COILS

ITEM No.	USE	DC RES.		REPLACEMENT DATA		
		PRI.	SEC.	MOTOROLA PART No.	MEISSNER PART No.	
L1	Ant. Coil	16.8Ω		24B591664		Yellow identification dot. Specify color on orders.
L2	RF Coil	16.8Ω		24B591664		Yellow identification dot. Specify color on orders.
L3	Osc. Coil	1Ω	3.5Ω	24B592153		Green identification dot. Specify color on orders.
L4	1st IF	14Ω	14Ω	24B485670	16-6678	
L5	2nd IF	14Ω	14Ω	24B485670	16-6678	
L6	Hash Choke	0Ω		24K78026		
L7	Hash Choke	0Ω		24K78026		
L8	Hash Choke	0Ω		24A472535		

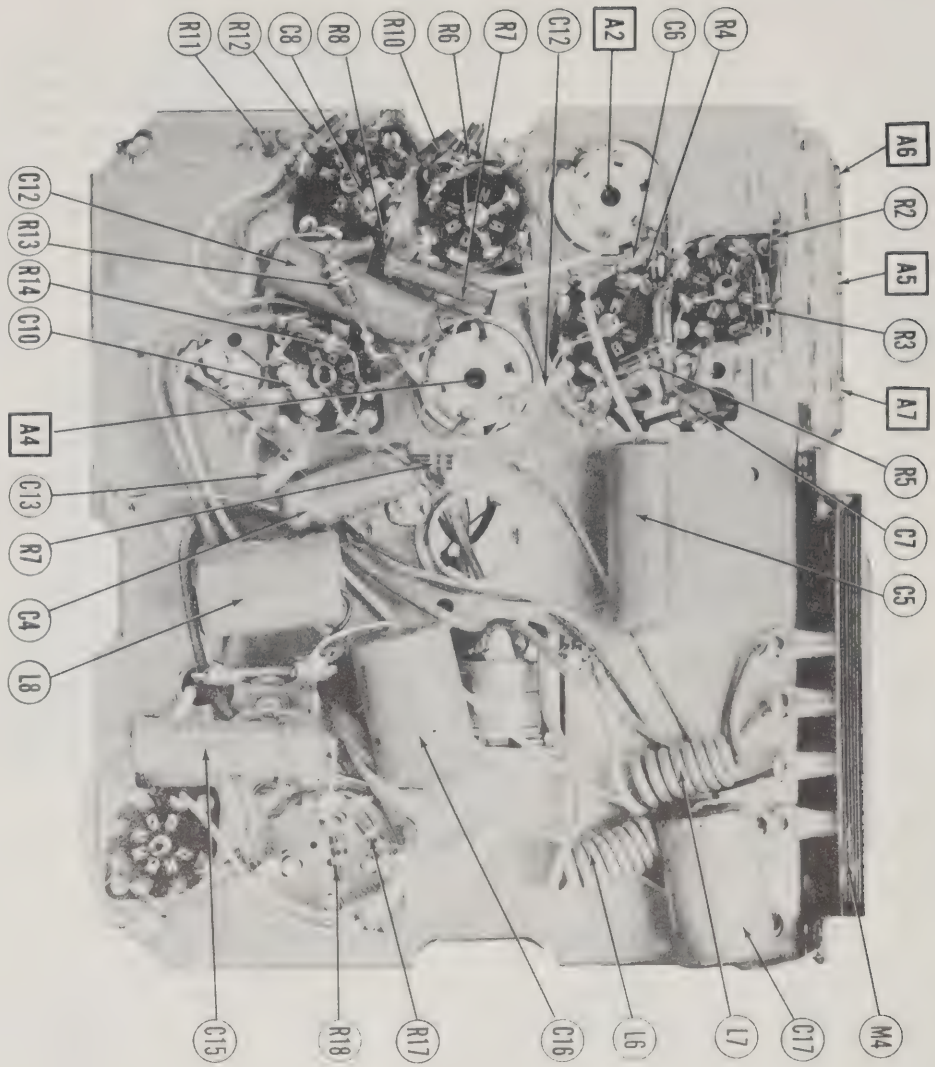
VIBRATOR

ITEM No.	TYPE	INPUT VOLTS	FREQUENCY	REPLACEMENT DATA			INSTALLATION NOTES
				MOTOROLA PART No.	AEROVOX PART No.	RADIART PART No.	
M1	Int.	6VDC	115 ∿	48B3333	A-200	5342	

MISCELLANEOUS

ITEM No.	PART NAME	MOTOROLA PART No.	NOTES
M2	Tuner	MT-75	Complete
M3	Fuse	65A10266	Type 3AG, 10 Amp.
M4	Spark Plate	1X78041	
A5	Trimmer Strip	20K592078	Osc. Adj.
A6			RF Adj.
A7			Ant. Adj.

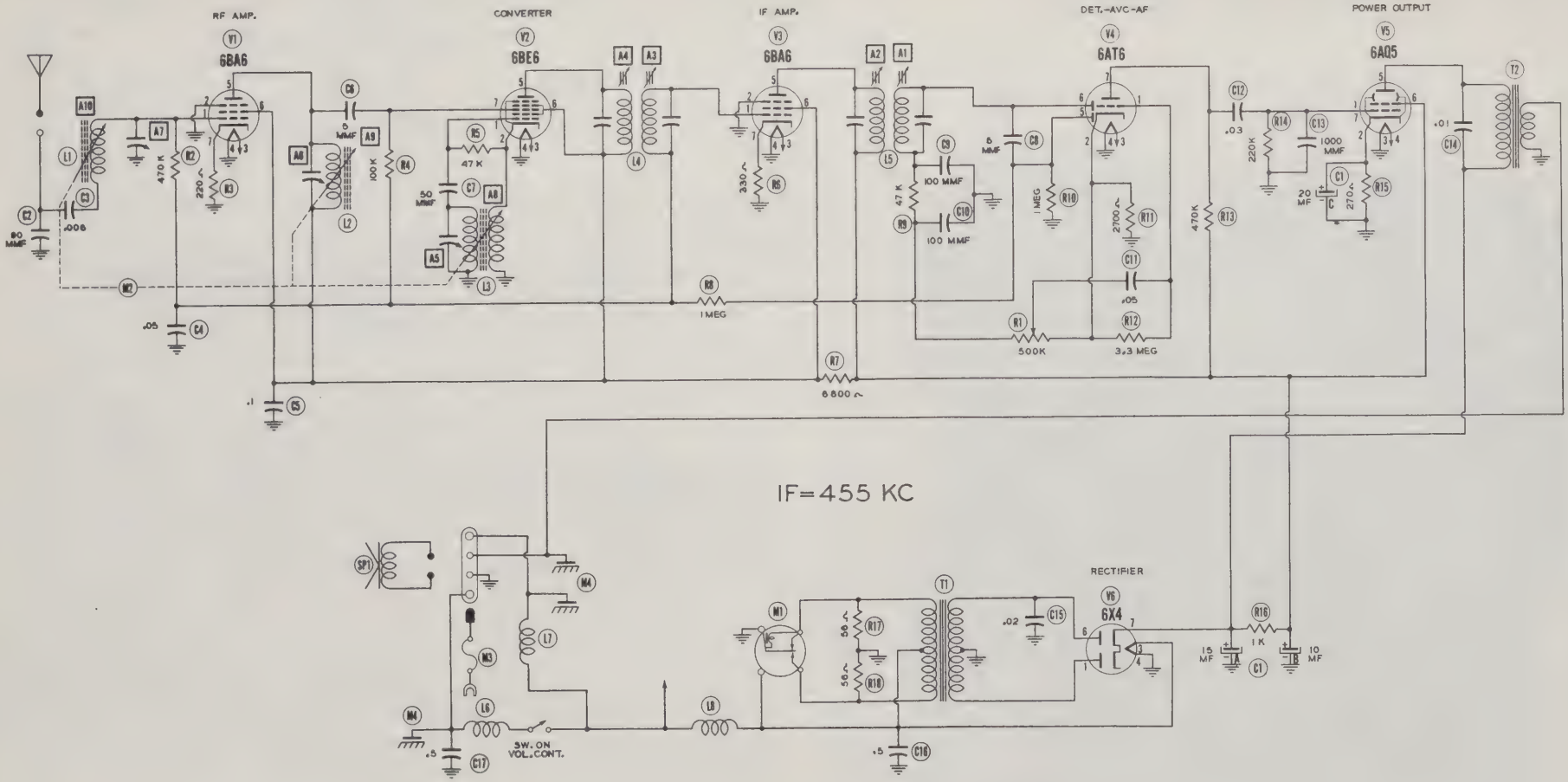
CHASSIS—BOTTOM VIEW



SET 97
FOLDER 10

MOTOROLA MODEL 600

MOTOROLA MODEL 600



VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V 1	6BA6	-.2VDC	0V.	6.3VDC	0V.	85VDC	85VDC	1.9VDC
V 2	6BE6	§-3.2VDC	0V.	6.3VDC	0V.	85VDC	85VDC	-.3VDC
V 3	6BA6	-.3VDC	0V.	6.3VDC	0V.	205VDC	85VDC	1.9VDC
V 4	6AT6	0V.	.9VDC	6.3VDC	0V.	-.2VDC	.1VDC	80VDC
V 5	6AQ5	0V.	10VDC	0V.	6.3VDC	215VDC	205VDC	0V.
V 6	6X4	270VAC	0V.	6.3VDC	0V.	0V.	270VAC	235VDC

§ TAKEN WITH VACUUM TUBE VOLTMETER.

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V 1	6BA6	2.5 Meg.	0Ω	.3Ω	0Ω	†7.8KΩ	†7.8KΩ	270Ω
V 2	6BE6	47KΩ	1Ω	.3Ω	0Ω	†7.8KΩ	†7.8KΩ	2 Meg.
V 3	6BA6	2 Meg.	0Ω	.3Ω	0Ω	†1000Ω	†7.8KΩ	330Ω
V 4	6AT6	3.3 Meg.	2.7KΩ	.3Ω	0Ω	1 Meg.	550KΩ	†470KΩ
V 5	6AQ5	220KΩ	270Ω	0Ω	.3Ω	†500Ω	†1000Ω	220KΩ
V 6	6X4	375Ω	Inf.	.3Ω	0Ω	Inf.	375Ω	280KΩ

† MEASURED FROM PIN 7 OF V6.

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1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Battery voltage maintained at 6 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 15% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

PHILCO MODELS 50-1420, 50-1421, 50-1422, 50-1423

PHILCO MODELS 50-1420, 50-1421, 50-1422, 50-1423

PHILCO MODEL 50-1421

TRADE NAME	Philco, Models 50-1420, 50-1421, 50-1422, 50-1423
MANUFACTURER	Philco Corp., Tioga and "C" Sts., Philadelphia, Pennsylvania
TYPE SET	AC Operated Combination Phono-Radio Superheterodyne Receiver with Loop Antenna
TUBES (FIVE)	Types 12BE6 Converter, 12BA6 IF Amp., 6AQ6 DET-AVC-AF, 35L6GT Power Output, 50Y7GT Rectifier
POWER SUPPLY	105-120 Volts AC — RATING .34 Amp. at 117 Volts AC
TUNING RANGE—BROADCAST	540-1600KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer turn tuning cap fully closed and set pointer to last reference mark at low frequency end of dial. Use isolation transformer if available. If not connect a .1MFD capacitor in series with low side of signal generator and B-. Loop should be maintained in same relative position to chassis as when receiver is in cabinet. Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.1MFD	High side to "EXT. ANT." connection. Low side to B-.	455KC (400 ∿ Mod.)	Tuning gang fully closed	Across voice coil.	A1, A2, A3, A4	Adjust for maximum output. If isolation transformer is not used, reduce dummy antenna to .001MFD to reduce hum modulation.
2.		Loop	1600KC	1600KC	"	A5	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
3.		Loop	1500KC	Tune for max. output.	"	A6	"

MODELS 50-1420 AND 50-1421 USE PHILCO MODEL M-9C RECORD CHANGER; FOR SERVICE INFORMATION SEE PHOTOFACT SET #74 FOLDER #7 OR RECORD CHANGER MANUAL CM-2.
MODELS 50-1422 AND 50-1423 USE PHILCO MODEL M-20 RECORD CHANGER.

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PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: PHILCO PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
V1	Converter	12BE6	12BE6	7CH	
V2	IF Amp.	12BA6	12BA6	7BK	
V3	DET-AVC-AF	6AQ6	6AQ6	7BT	
V4	Power Output	35L6GT	35L6GT	7AC	
V5	Rectifier	50Y7GT	50Y7GT	8AN	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: PHILCO PART No.	AEROVOX PART No.	CENTRALAB PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1	20	150	30-2568-22	AF4F			D13292	Voltage Doubler Cap.
C2A	40	250	30-2575-26	E58C29			D13339	Filter-Orange
B	40	250						Filter-Red
C	20	150						Filter-Blue
C3	5		60-90505007	GP5K	D2-5	NPOK-5	MS-55	Ant. Coupling
C4	50	500	60-00515307	GP50M	D6-500	GP1K-50	1FM-45	Osc. Grid Cap.
C5	10		30-1424-6	C110DNPO	D2-10	NPOK-10	MS-41	Fixed Trimmer
C6	.03	400	45-3500-1	P488-03			TM-13	AVC Filter
C7	.05	400	61-0122	P488-05			TM-15	AVC Filter
C8	.1	400	61-0113	P488-1			72P52	Line Isolation
C9	.01	400	61-0120	P488-01	D6-103	821-01	TM-11	IF Screen Bypass
C10	.003	600	61-0109	P688-003	D6-302	GP2M-003	TM-23	IF Decoupling
C11	.004	600	61-0179	P488-004	D6-472	GP2M-0047	TM-24	Tone Compensation-See Note 1
C12	.006	400	45-3500-7	P488-006	D6-562	GP2M-0056	TM-26	Audio Coupling
C13	.1	400	61-0113	P488-1			TM-1	AF Amp. Plate Decoupling
C14	.006	400	45-3500-7	P488-006	D6-562	GP2M-0056	TM-26	Audio Coupling
C15	220		66-122001001	GP220M	D6-221	GP2K-220	1FM-325	Output Grid Bypass
C16	.004	600	30-4623	P688-004	D6-472	GP2M-0047	TM-24	Output Plate Bypass
C17	.04	400	45-3500	P488-04			TM-14	Line Filter-See Note 2

Note 1. Model 50-1420 uses .01MFD in this application. MFGR'S Part No. 61-0120.
Note 2. Model 50-1420 uses .05MFD in this application. MFGR'S Part No. 61-0107.

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: PHILCO PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	INSTALLATION NOTES
R1A	2 Meg.	½	33-5564-3	Q18-139X	T-116	BT-78-S	Volume control tapped at 1 Meg. -See Note
B	Switch		Not Req.	76-1	SW-A	Not Req.	Attach to R1A per instructions

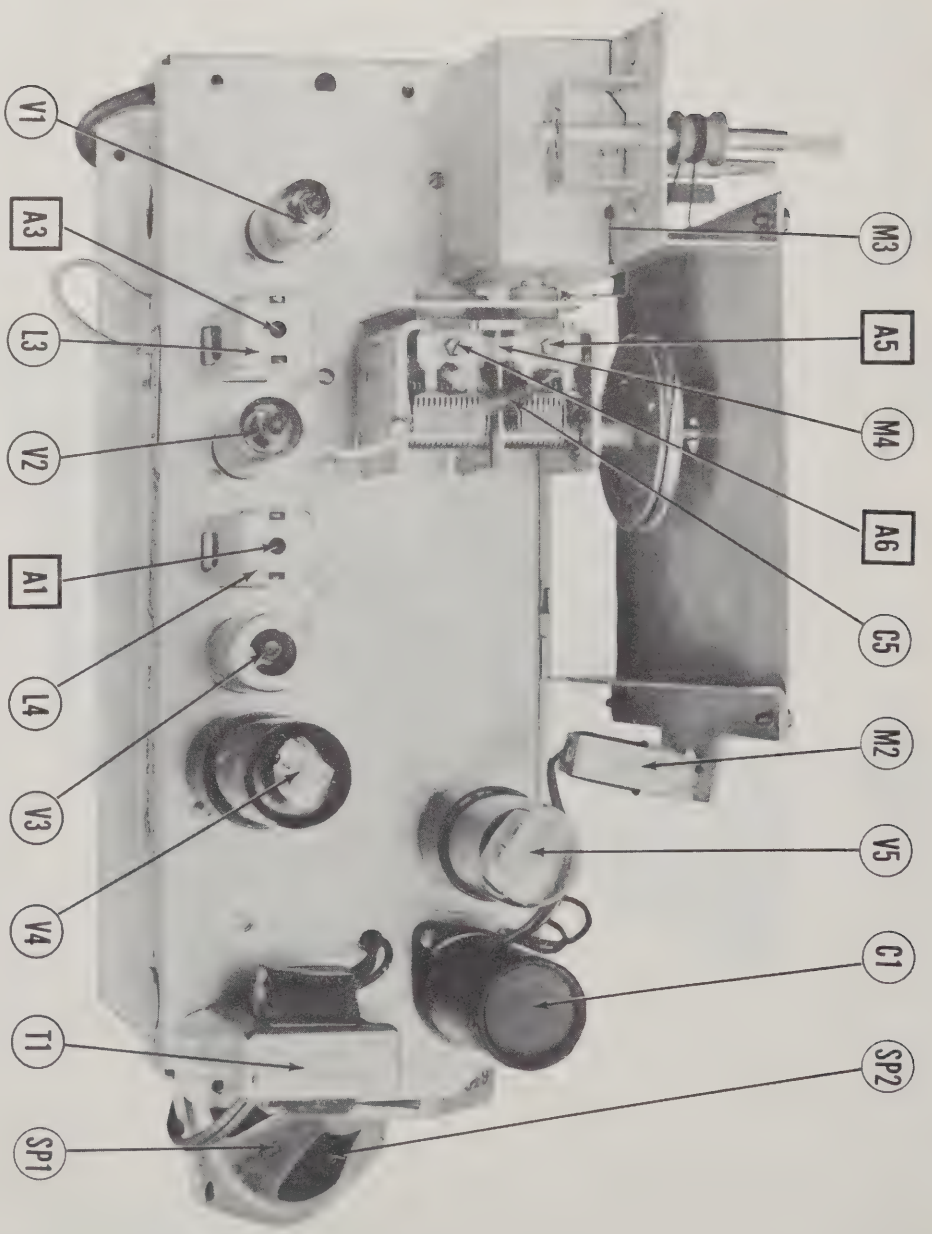
Note. Model 50-1420 uses 2 Meg. control, Part No. 33-5535-15, and model 50-1423 use a 2 Meg. control, Part No. 33-5564-2.

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: PHILCO PART No.	IRC PART No.	IDENTIFICATION CODES
R2	150KΩ	½	66-4153340	BTS-150K	Ant. Isolation
R3	47KΩ	½	66-3478340	BTS-47K	Osc. Grid-See Note 2
R4	33Ω	½	66-0333340		Parasitic Supp. -Wire Wound
R5	22KΩ	½	66-3223340	BTS-22K	AVC Network
R6	2.2 Meg.	½	66-5223340	BTS-2.2 Meg.	AVC Network
R7	82Ω	½	66-0828340	BW-½-82	IF Cathode-See Note 3-Wire Wound
R8	100KΩ	½	66-4103340	BTS-100K	IF Screen
R9	1000Ω	½	66-2103340	BTS-1000	IF Decoupling
R10	470KΩ	½	66-4473340	BTS-470K	Diode Load
R11	47KΩ	½	66-3473340	BTS-47K	Diode Filter
R12	56KΩ	½	66-3568340	BTS-56K	Tone Compensation-See Note 4
R13	10 Meg.	½	66-6103340	BTS-10 Meg.	AF Amp. Grid
R14	220KΩ	½	66-4223340	BTS-220K	AF Amp. Plate
R15	330KΩ	½	66-4333340	BTS-330K	AF Amp. Plate Decoupling
R16	470KΩ	½	66-4473340	BTS-470K	Output Grid
R17	180Ω	1	66-1183340	BW-1-180	Output Cathode
R18	10KΩ	2	66-3103340	BT-2-10K	Filter
R19	10KΩ	2	66-3103340	BT-2-10K	Filter
R20	180Ω	½	66-1184340	BW-½-180	Filter-Wire Wound
R21	120KΩ	½	66-4123340	BTS-120K	Isolation

Note 2. Model 50-1420 uses 22KΩ resistor in this application.
Note 3. Model 50-1420 and model 50-1423 use 100Ω resistor in this application.
Note 4. Model 50-1420 and model 50-1423 use 47KΩ resistor in this application.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		PHILCO	STANCOR	MERIT	CHICAGO	
	PRI.	SEC.	PRI.	SEC.	PART No.	PART No.	PART No.	PART No.	
T1A	3.7KΩ	3.9Ω	430Ω	.7Ω	32-8242 ①	A-3876	A-2930	RO-6	① Used in models 50-1421, 50-1422 and 50-1423. ② Used in model 50-1420
B					32-8382 ②				

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			PHILCO PART No.	JENSEN PART No.	QUAM PART No.	
	FIELD	V. C. IMP.		ST-113		① Used in model 50-1421, 50-1422 and 50-1423. ② Used in model 50-1420.
SP1A	PM	3.9Ω	36-1629 ①	MOD. P4-X	4A07	
SP2A	PM	3.5Ω	36-1625-3 ②			
	CONE DIA.	V. C. DIA.				
SP1B	5"	9/16"				
SP2B						

R F COILS

ITEM No.	USE	DC RES.		REPLACEMENT DATA		
		PRI.	SEC.	PHILCO PART No.	MEISSNER PART No.	
L1A	Loop Ant.	3.8Ω		32-4375-1		Model 50-1421
B	Loop Ant.			76-2127-9		Model 50-1423
C	Loop Ant.			32-4375		Model 50-1420, 50-1422
L2A	Osc. Coil	1.1Ω	12.5Ω	32-4190-3	14-1073	Models 50-1420, 50-1421, 50-1422
B	Osc. Coil	1.1Ω	9.4Ω	32-4190-2	14-1060	Model 50-1423
L3	1st IF	13Ω	13Ω	32-4160	16-6678	
L4	2nd IF	12.8Ω	13.2Ω	32-4240	16-6678	

PHONO CARTRIDGE and NEEDLE

ITEM No.	REPLACEMENT DATA					REMARKS
	PHILCO PART No.	ASTATIC PART No.		SHURE PART No.		
		CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	
M1A	35-2671	LT2-M	T (M)	W61B	A62A	Models 50-1420, 50-1421 (Std.)
	45-1609	U-J	UJ			Models 50-1420, 50-1421 (Long-Play)
B	76-4649					Models 50-1422, 50-1423

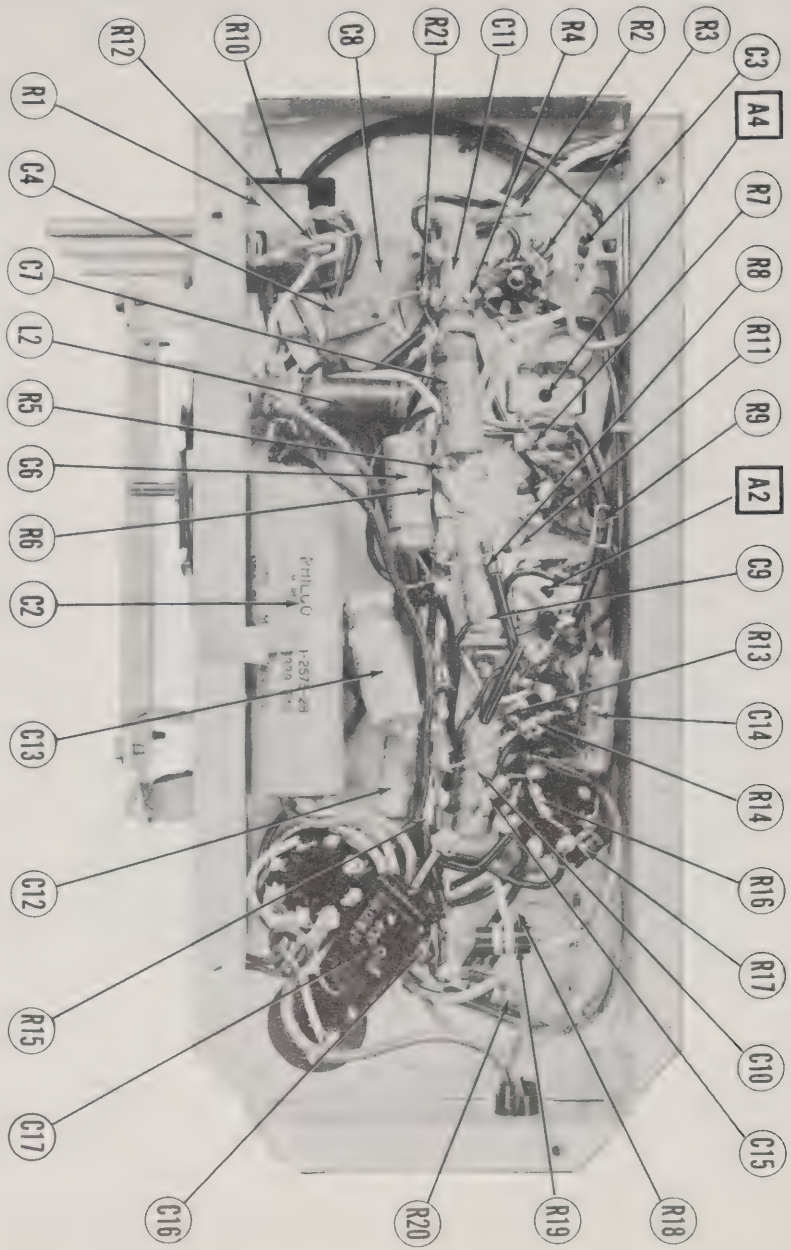
DIAL LIGHTS

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		NOTES
					PHILCO PART No.		
M2	Bayonet	6-8	.25	Blue	34-2605		Type #44

MISCELLANEOUS

ITEM No.	PART NAME	PHILCO PART No.	NOTES
M3	Switch	42-1847	Radio-Phono
M4A	2 Gang Var. Cap.	31-2751-3	(45-505MMF, 40-185MMF)
B	2 Gang Var. Cap.	31-2751-2	Model 50-1423
C	2 Gang Var. Cap.	31-2727-6	Model 50-1420
	Dial Scale	54-5047	
	Knob	54-4557	
	Knob	54-4527-9	Model 50-1423

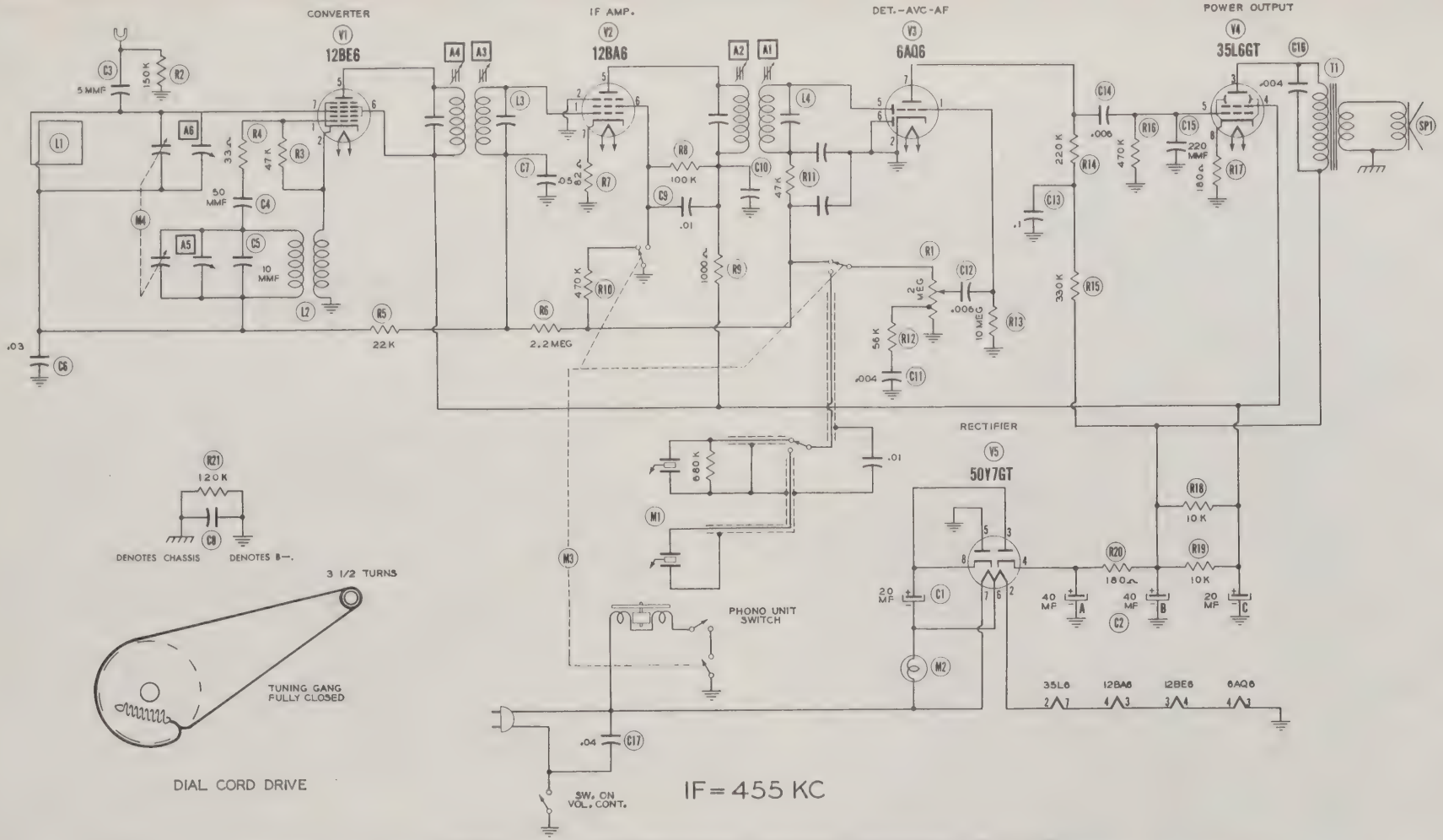
CHASSIS—BOTTOM VIEW



SET 97 FOLDER 11

PHILCO MODEL 50-1420

PHILCO MODEL 50-1420



ALL MEASUREMENTS TAKEN WITH FUNCTION SWITCH IN "RADIO" POSITION.

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	12BE6	§-3.8VDC	0V.	20 VAC	7VAC	115VDC	115VDC	-.1VDC	
V 2	12BA6	-.1VDC	0V.	20VAC	32VAC	115VDC	36VDC	.2VDC	
V 3	6AQ6	-.7VDC	0V.	0V.	7VAC	-.4VDC	0V.	55VDC	
V 4	35L6GT	0V.	67VAC	185VDC	118VDC	0V.	0V.	32VAC	42VDC
V 5	50Y7GT	117VAC	67VAC	110VDC	220VDC	0V.	110VAC	117VAC	110VDC

§ TAKEN WITH VACUUM TUBE VOLTMETER.

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	12BE6	47KΩ	1.1Ω	20Ω	7Ω	†6KΩ	†6KΩ	2.2 Meg.	
V 2	12BA6	2.2 Meg.	0Ω	20Ω	32Ω	†6KΩ	†100KΩ	82Ω	
V 3	6AQ6	10 Meg.	0Ω	0Ω	7Ω	400KΩ	0Ω	†550KΩ	
V 4	35L6GT	0Ω	67Ω	†600Ω	†5KΩ	470KΩ	0Ω	32Ω	180Ω
V 5	50Y7GT	110Ω	67Ω	1 Meg.	180KΩ	0Ω	110Ω	117Ω	1 Meg.

† MEASURED FROM PIN 4 OF V5.

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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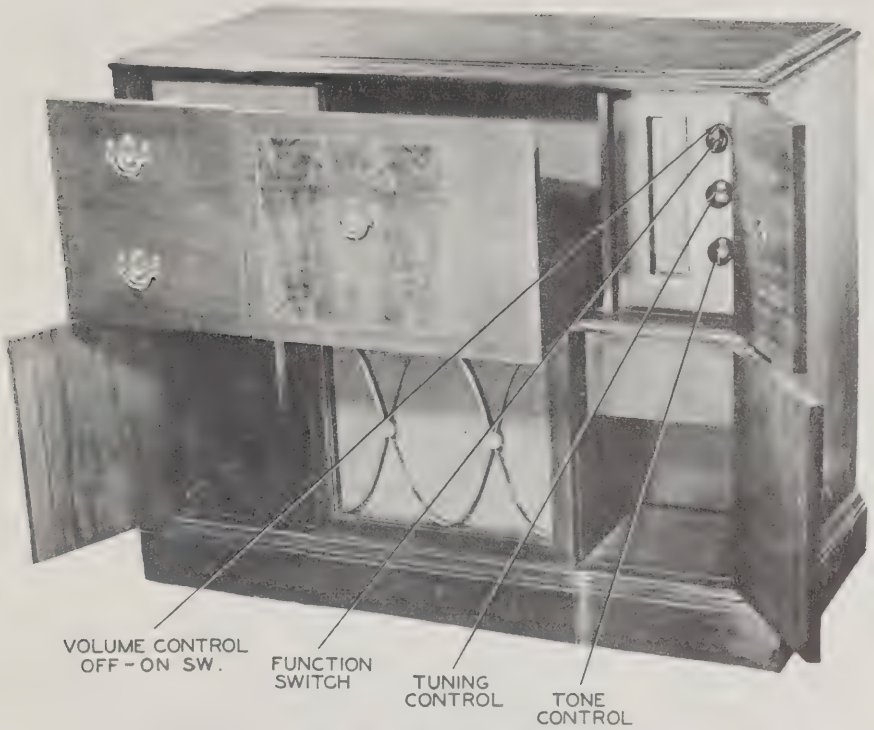
97-11

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

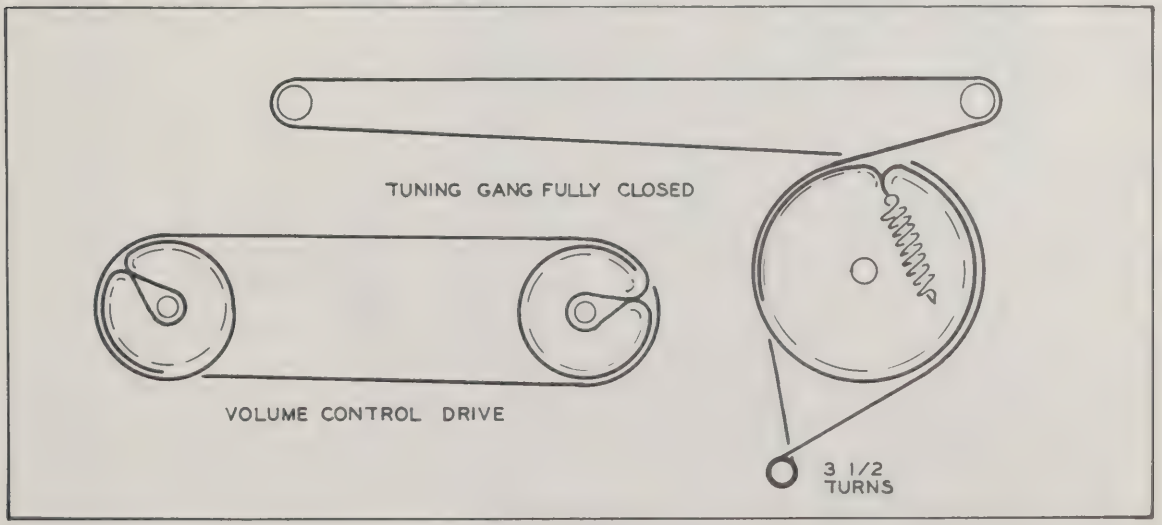
RCA VICTOR
MODELS A106, 9W106 (Ch. RC-622)



RCA VICTOR MODEL 9W106

TRADE NAME	RCA Victor, Models A106, 9W106 (Ch. RC-622)		
MANUFACTURER	RCA Victor Div. Radio Corp. of America, Camden, New Jersey		
TYPE SET	AC Operated Combination Phono-Radio, AM-FM Superheterodyne Receiver with Loop Antenna		
TUBES (TEN)	Types 6BJ6 RF Amp., 6J6 Converter, 6BA6 IF Amp., 6AU6 Limiter, 6AL5 Ratio Det., 6AV6 DET-AVC-AF, 6AV6 Phase Inv., (2) 6V6GT Power Output, 6X5GT Rectifier		
POWER SUPPLY	110-120 Volts AC	RATING	.95 Amp. at 117 Volts AC
TUNING RANGE-BROADCAST	540-1600KC	FREQ. MOD.	88-108MC

FOR SERVICE INFORMATION ON RECORD CHANGERS SEE RCA VICTOR MODEL RP168 PHOTOFACT SET #72 FOLDER 10 AND RCA VICTOR MODEL RP178 PHOTOFACT SET #79 FOLDER 12 OR RECORD CHANGER MANUAL CM-2.



DIAL CORD DRIVE

HOWARD W. SAMS & CO., INC. • Indianapolis Indiana

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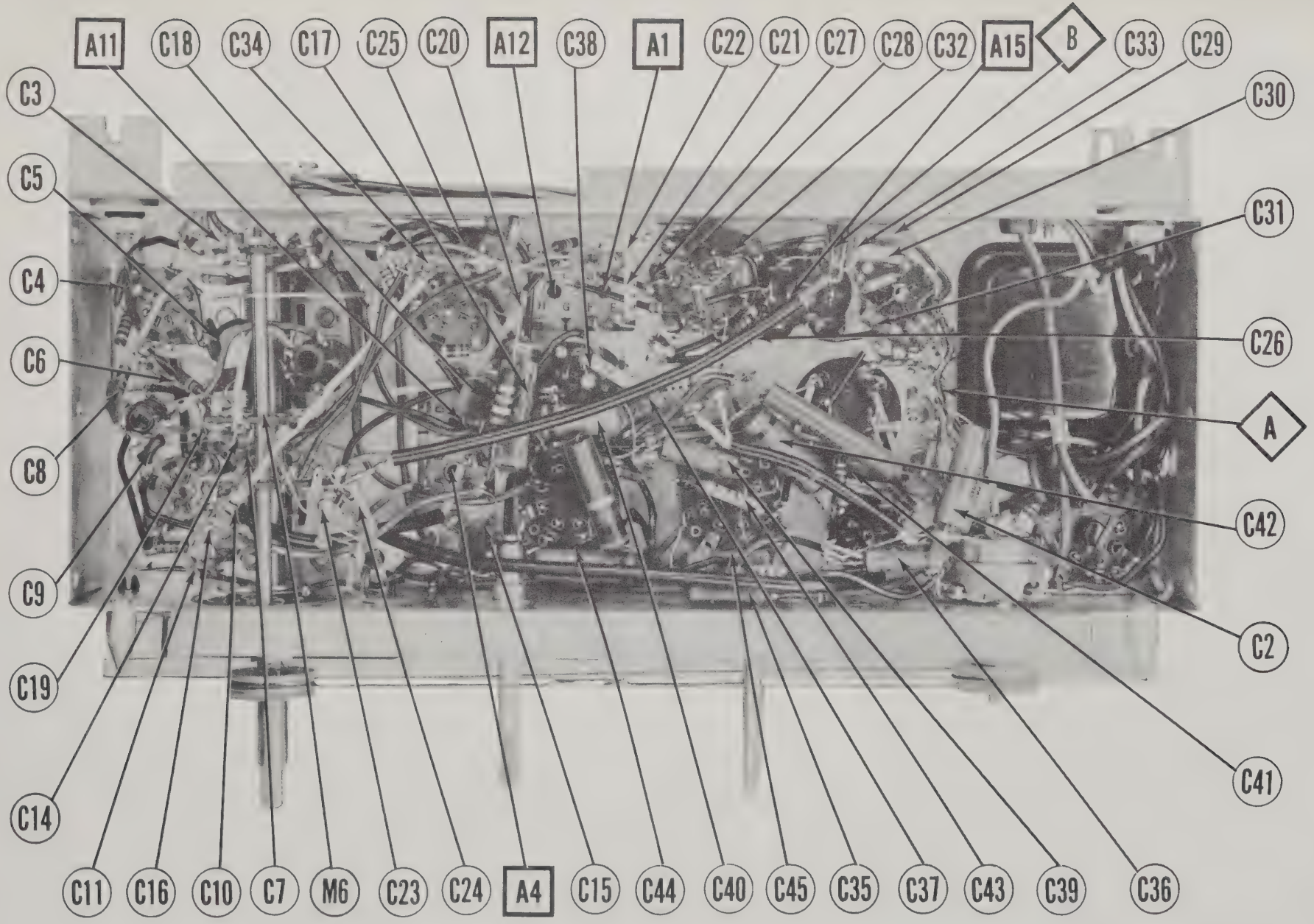
A11
C18
C34
C17
C25
C20
A12
C38
A1
C22
C21
C27
C28
C32
A15
B
C33
C29
C3
C30
C5
C31
C4
C26
C6
A
C8
C42
C9
C2
C19
C41
C14
C11
C16
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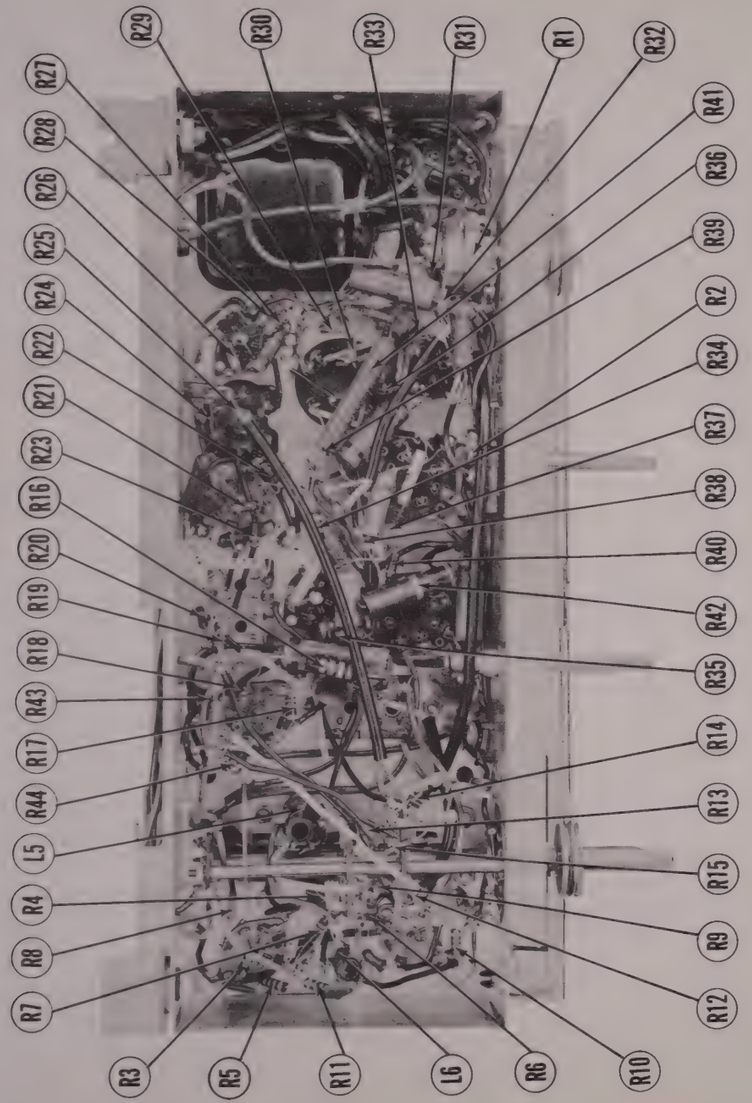
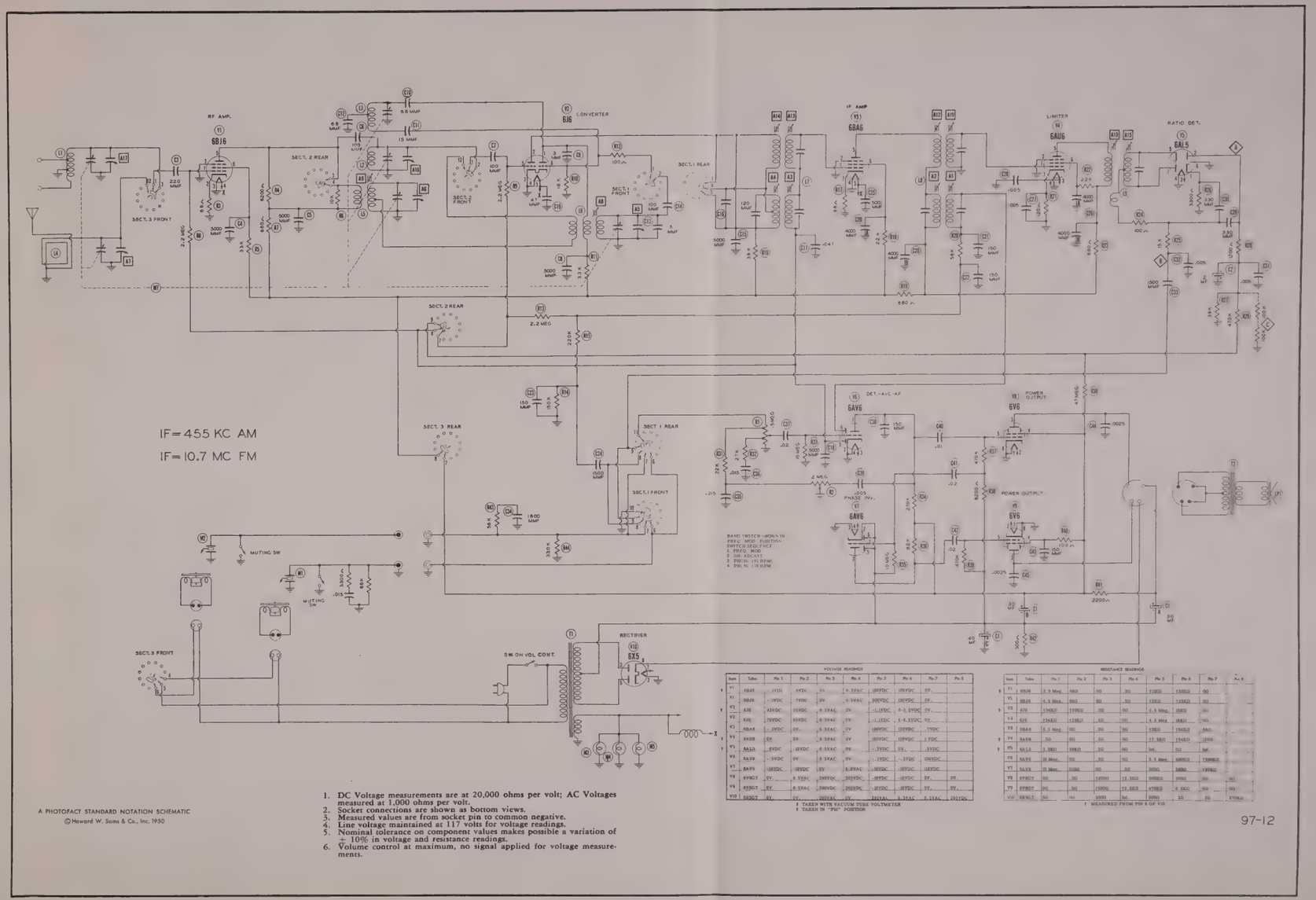
C37
C43
C39
C36





A PHOTOFACT STANDARD NOTATION SCHEMATIC

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1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
†	V1	6BJ6	-.1VDC	6VDC	0V	6.3VAC	130VDC	115VDC	0V	
	V1	6BJ6	-.1VDC	-.1VDC	0V	6.3VAC	100VDC	0VDC	0V	
†	V2	6J6	63VDC	95VDC	6.3VAC	0V	-1.1VDC	0 -1.8VDC	0V	
	V2	6J6	70VDC	85VDC	6.3VAC	0V	-1.1VDC	0 -6.5VDC	0V	
†	V3	6BA6	-.2VDC	0V	6.3VAC	0V	130VDC	125VDC	170DC	
	V4	6AU6	0V	0V	6.3VAC	0V	180VDC	125VDC	1.7DC	
†	V5	6AL5	6VDC	115VDC	6.3VAC	0V	-.3VDC	0V	6VDC	
	V6	6AV6	-.5VDC	0V	6.3VAC	0V	-.3VDC	-.5VDC	109VDC	
†	V7	6AV6	-.1VDC	-.1VDC	0V	6.3VAC	-.1VDC	-.1VDC	-.1VDC	
	V8	6V6GT	0V	6.5VAC	250VDC	260VDC	-.1VDC	-.1VDC	0V	0V
	V9	6V6GT	0V	6.5VAC	250VDC	260VDC	-.1VDC	-.1VDC	0V	0V
	V10	5Y3GT	0V	0V	285VAC	0V	285VAC	6.3VAC	6.3VAC	295VDC

† TAKEN WITH VACUUM TUBE VOLTMETER
† TAKEN IN "PIX" POSITION

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
†	V1	6BJ6	2.5 Meg	560Ω	0Ω	30Ω	112KΩ	133KΩ	0Ω	
	V1	6BJ6	4.5 Meg	560Ω	0Ω	30Ω	112KΩ	133KΩ	0Ω	
†	V2	6J6	135KΩ	125KΩ	0Ω	0Ω	4.5 Meg	180Ω	0Ω	
	V2	6J6	135KΩ	125KΩ	0Ω	0Ω	4.5 Meg	180Ω	0Ω	
	V3	6BA6	5.5 Meg	0Ω	0Ω	0Ω	120Ω	135KΩ	560Ω	
†	V4	6AU6	0Ω	0Ω	30Ω	0Ω	17.5KΩ	135KΩ	220Ω	
†	V5	6AL5	2.5KΩ	39KΩ	30Ω	0Ω	Inf.	0Ω	Inf.	
	V6	6AV6	10 Meg.	0Ω	30Ω	0Ω	2.5 Meg	690KΩ	1390KΩ	
†	V7	6AV6	10 Meg.	100Ω	0Ω	30Ω	300Ω	360Ω	190KΩ	
	V8	6V6GT	0Ω	0Ω	120Ω	23.5KΩ	500Ω	200Ω	0Ω	0Ω
	V9	6V6GT	0Ω	30Ω	120Ω	23.5KΩ	470Ω	0 KΩ	0Ω	0Ω
	V10	5Y3GT	0Ω	0Ω	100Ω	Inf.	100Ω	0Ω	0Ω	270Ω

† MEASURED FROM PIN 8 OF V10

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set dial pointer turn tuning gang fully closed and set the pointer to the calibration mark at the low frequency end of the dial backplate.

AM ALIGNMENT

Loop should be maintained in same relative position to chassis as when receiver is in cabinet.
Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.
Alternately load the primary and secondary windings of the IF transformers with 47KΩ while the opposite side of the same transformer is being adjusted. Connect the 47KΩ resistor across the primary while the secondary is being adjusted, and across the secondary while the primary is being adjusted. Load only one winding at a time.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1	01MFD	High side to pin 5 (Grid) of 6J6 (V2). Low side to chassis.	455KC (400 ~ Mod.)	AM (fourth position CCW)	Tuning gang fully open	Across voice coil	A1, A2, A3, A4	Adjust for maximum output. See instructions above.
2		Loop	1400KC	"	Set pointer 5 ins. to the left of the calibration mark.	"	A5, A6, A7	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
3		Loop	600KC	"	Set pointer 1 1/16 ins. to the left of the calibration mark.	"	A8, A9	Connect a 10KΩ resistor across A7. Adjust A8 for maximum output. Remove 10KΩ resistor. Adjust A9 for maximum output. Repeat steps 2 and 3 until no further improvement can be made. Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.

FM IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

Connect two matched 100KΩ (1%) resistors in series from point A to chassis. The junction of these two resistors is alignment point B as shown on the schematic.
Alternately load the primary a secondary of the FM IF transformers with a 680Ω resistor in the manner described under AM Alignment

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
4	01MFD	High side to pin 5 (Grid) of 6J6 (V2). Low side to chassis	10.7MC (Unmod.)	FM (third position CCW).	Tuning gang fully open	DC Probe (+) Point A Common to chassis.	A10, A11 A12, A13 A14	Adjust for maximum deflection.
5	01MFD	"	"	"	"	DC Probe (+) Point B Common to Point C	A15	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

FM IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60 ~ modulation and 450KC sweep. Use 120 ~ sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT SCOPE	ADJUST	REMARKS
4	.01MFD	High side to pin 5 (Grid) of 6J6 (V2). Low side to chassis.	10.7MC (450KC Sweep)	FM (third position CCW)	Tuning gang fully open	Vert. Amp. to Point A. Low side to chassis	A10, A11, A12, A13, A14	Disconnect stabilizer cap C2. Adjust for maximum amplitude and symmetry as per figure 1.
5	.01MFD	"	"	"	"	Vert. Amp. to Point B. Low side to chassis.	A15	Reconnect C2. Adjust A15 so 10.7MC occurs at center of crossover lines as per figure 2. Slightly retouch A10 for maximum amplitude and straightness of crossover lines.

FM RF ALIGNMENT

The signal generator output lead should be terminated with its characteristic impedance, usually 50 ohms.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
6	Two 1200Ω carbon res	High side thru 200Ω to ungrounded FM antenna terminal. Low side thru 120Ω to chassis	90MC (Unmod.)	FM	Set pointer 1 3/16 ins. to the left of the calibration mark.	DC Probe to Point A Common to chassis.	L3	Expand or compress coil turns for maximum deflection.
7	"	"	106MC	"	Tune for max. deflection.	"	A16, A17	Adjust for maximum deflection.
8	"	"	90MC	"	"	"	L1, L2	Expand or compress coil turns for maximum deflection. Repeat steps 7 and 8 until no further improvement can be made.

FIG. 1

FIG. 2

CRITICAL LEAD DRESS

Note. The leads listed may not be critical in all receivers. However, by dressing the leads as specified, unusual difficulties will be minimized.

1. The plate lead of the second IF transformer should be dressed down against the chassis to obtain maximum capacity between the lead and chassis. This lead is specified to be two inches long.
2. The AM band RF transformer plate and grid leads should be dressed so as to minimize coupling to the RF amplifier grid circuit, and kept close to chassis as when possible.
3. The 2.2 meg. grid resistors connecting to the RF and mixer grids should have a minimum practicable amount of lead extending on the grid end. The leads should be cut off short on the grid end and long on the AVC end.
4. The unshielded plate lead from the function switch to the 1st IF transformer should be dressed away from the switch wafer audio lugs as much as possible.
5. The ground strap between the RF shelf and chassis should be well soldered and kept as short as practicable. FM instability may be causes by having this ground strap too long, particularly when no input is connected to the FM antenna terminal.
6. The lead from the 2nd IF to the grid of the 6BA6 1st IF amplifier should be kept short, and dressed against the chassis as much as practicable.
7. The lead from the 2nd IF to the AM detector diode should be dressed to minimize coupling to the 6AV6 1st AF grid and kept close to chassis.
8. Leads from the volume control taps should be kept clear of all filament and output plate wires.
9. The loop cable when connected to the AM sec. gang stator should be dressed to have minimum capacity coupling to the stator lug on the RF section of gang condenser.
10. The oscillator coupling condenser C10 should be dressed to have minimum capacity to the mixer grid, Pin No. 5 on V2.
11. The shielding on the shielded lead from the volume control to the function switch should have the minimum practicable exposed wire at the function switch end.

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: RCA PART No.	STANDARD REPLACEMENT	RMA BASE DIAG.	INSTALLATION NOTES
V1	RF Amp.	6BA6	6BA6	7CM	
V2	Converter	6J6	6J6	7BF	
V3	IF Amp.	6BA6	6BA6	7BK	
V4	1st AF Amp.	6AL5	6AL5	6BT	
V5	Ratio Det.	6AL5	6AL5	6BT	
V6	DET.-AVC-AF	6AV6	6AV6	7BT	
V7	Power Output	6V6GT	6V6GT	7AC	
V8	Power Output	6V6GT	6V6GT	7AC	
V10	Rectifier	6X5GT	6X5GT	4S	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING CAP.	RATING VOLT	REPLACEMENT DATA: RCA PART No.	ARROW FOR ALL TYPES	CENTRALAB PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES INSTALLATION NOTES
C1A	30	450	72053	A2P6424A			E1-330	▲ Filter
B	30	350						■ Filter
C	40	350						● Bias Filter
C1	30	50	73747	P2B150/4			TVA -12	◆ Filter
C2	220		71830	GP220K	D5-221	GP2K-2S30	1FM-325	RF Coupling
C3	5000		73473	BPD-5	D5-502	B11-005	2SC1	RF Screen Bypass
C4	5000		73473	BPD-5	D5-502	B11-005	2SC1	RF Screen Bypass
C5	100		39396	GP100K	D5-101	GP2K-100	1FM-31	RF Coupling
C6	100		39396	GP100K	D5-101	GP2K-100	1FM-31	RF Coupling
C7	5000		73473	BPD-5	D5-502	B11-005	2SC1	RF Screen Bypass
C8	39		74783	813CN220		M220K-3		Osc. Feedback
C9	68		35379	CN68KN750	D5-68	NT50L-68		Osc. Feedback
C10	68		35379	CN68KN750	D5-68	NT50L-68		Osc. Feedback
C11	68		35379	CN68KN750	D5-68	NT50L-68		Fixed Trimmer
C12	68		35379	CN68KN750	D5-68	NT50L-68		Fixed Trimmer
C13	5	50	93068	CN5CN750	D5-5	NT50L-5	M5-55	Fixed Trimmer
C14	5000		73473	BPD-5	D5-502	B11-005	2SC1	Conv. Plate Decoupling
C15	5000		73473	BPD-5	D5-502	B11-005	2SC1	Conv. Plate Decoupling
C16	150		71814	CN150KN750	D5-151	NT50L-150		Fixed Trimmer
C17	5000	600	73473	BPD-5	D5-502	B11-005	TM-15	AGC Filter
C18	5000		73473	BPD-5	D5-502	B11-005	2SC1	Conv. Filament Bypass
C19	47		39043	GP47M	D5-470	GP1K -47	1FM-45	1st IF Plate Decoupling
C20A	4000		74609	GP4000M	D5-472		3SC2	1st IF Plate Decoupling
B	4000			GP4000M	D5-472			Diode RF Filter
C21	150		44704	GP150M	D5-151	GP2K-150	1FM-315	Diode RF Filter
C22	150		44704	GP150M	D5-151	GP2K-150	1FM-315	RF Bypass
C23	150		44704	GP150M	D5-151	GP2K-150	1FM-315	RF Bypass
C24	1500		74093	GP1500M	D5-152	GP2L-2015	1FM-215	Audio Coupling
C25A	4000		74783	BPD-5	D5-502	B11-005	2SC1	1st IF Filament Bypass
B	4000			GP4000M	D5-472		3SC2	1st IF Plate Decoupling
C26	.005	100	71926	P288-005	D5-502	B11-005	TM-25	2nd IF Decoupling
C27	.005	100	71926	P288-005	D5-502	B11-005	TM-25	2nd IF Cath. Bypass
C28	330	500	38640	1488-00035	D5-331	GP2K-330	1FM-335	AF Amp. Plate Bypass
C29	330	500	38640	1488-00035	D5-331	GP2K-330	1FM-335	Diode Load Cap. *
C30	330	500	38640	1488-00035	D5-331	GP2K-330	1FM-335	Diode Load Cap. *
C31	1500	200	74093	P288-015	D5-152	GP2L-0015	1FM-215	Audio Coupling
C32	.005	200	71926	P288-005	D5-502	GP2M-5002	MB-105	Tone Compensation
C33	.015	200	72120	P288-015	D5-153	GP2M-5003	MB-115	Tone Compensation
C34	.015	200	72120	P288-015	D5-153		MB-115	Tone Compensation
C35	150		44704	GP150M	D5-151	GP2K-150	1FM-315	AF Amp. Plate Bypass
C36	.005	400	71853	P288-005	D5-502	B11-006	TM-11	Audio Coupling
C37	.01	400	71928	P288-01	D5-103	821-01	TM-12	Audio Coupling
C38	.02	400	72538	P288-02			TM-13	Audio Coupling
C39	150		44704	GP150M	D5-151	GP2K-150	1FM-315	RF Bypass
C40	.0025	1000	70844	P1088-0022			M-S-25	Output Plate Bypass
C41	.002	1000	70844	P1088-0022			M-S-25	Output Plate Bypass
C42	.0025	1000	70844	P1088-0022			M-S-25	Output Plate Bypass
C43	150		44704	GP150M	D5-151	GP2K-150	1FM-315	RF Bypass
C44	.02	400	72538	P288-02			TM-13	Audio Coupling
C45	.0025	1000	70844	P1088-0022			M-S-25	Output Plate Bypass

* When either items C29 or C30 are replaced, replace both capacitors of equal value.

RESISTORS

ITEM No.	RESISTANCE	WATTS	REPLACEMENT DATA: RCA PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	INSTALLATION NOTES
R1A	1.5 Meg.	½	74639	Q1B-139XX	A7P-95		Volume control tapped at 250KΩ and 50KΩ
B	Shaft		Not Req.	PQ	R8P-2		Attach to R1A per instructions
C	Switch		Not Req.	76-1	S9P-A	B-75	Attach to R1A per instructions
R2	2 Meg.	½	74637	Q1I-139	M-8S-8		Tone control
R3	68Ω						
R4	150Ω			BTS-6800			RF Cathode
R5	33KΩ			BTS-33K			RF Screen
R6	10KΩ			BTS-10K			RF Transformer Shunt.
R7	2.2 Meg.			BTS-2.2 Meg.			AVC Network
R8	2.2 Meg.			BTS-2.2 Meg.			AVC Network
R9	2.2 Meg.			BTS-2.2 Meg.			Osc. Plate Decoupling
R10	39KΩ			BTS-39K			Parasitic Supp.
R11	2.2 Meg.			BTS-2.2 Meg.			AVC Network
R12	100Ω			BTS-100			Diode Load
R13	220KΩ			BTS-220K			Conv. Plate Decoupling
R14	39KΩ			BTS-39K			AVC Network
R15	470KΩ			BTS-470K			Diode Load
R16	22KΩ			BTS-22K			1st IF Screen
R17	68KΩ			BTS-680			Decoupler
R18	68KΩ			BTS-680			2nd IF Screen
R19	68KΩ			BTS-680			2nd IF Decoupling
R20	68KΩ			BTS-680			Balancing
R21	120Ω						De-emphasis
R22	22KΩ			BTS-22K			2nd FM IF Cathode
R23	68KΩ			BTS-680			2nd FM IF Screen
R24	100Ω 5%						2nd FM IF Decoupling
R25	15KΩ			BTS-15K			Balancing
R26	1500Ω 5%			BTS-1500-5%			De-emphasis
R27	39KΩ 5%			BTS-39K-5%			1st IF Plate Load
R28	12000Ω 5%			BTS-12000-5%			1st IF Plate Load
R29	470KΩ			BTS-470K			Balancing
R30	47 MFG						Delayed AVC
R31	22KΩ			BTS-22K			Tone Compensation
R32	22KΩ			BTS-22K			Tone Compensation
R33	10 Meg.			BTS-10 Meg.			AF Amp. Grid
R34	270KΩ			BTS-270K			AF Amp. Plate
R35	10 Meg.			BTS-10 Meg.			Phase Inv. Grid
R36	10 Meg.			BTS-10 Meg.			Phase Inv. Plate
R37	470KΩ			BTS-470K			Output Grid
R38	820KΩ			BTS-820K			Output Grid
R39	470KΩ			BTS-470K			Output Grid
R40	100Ω						Delayed AVC
R41	2500Ω			AB-2250			Filter-Wire Wound
R42	68000Ω 5%		73637				Parasitic Supp.
R43	56KΩ			BTS-56K			Tone Compensation
R44	330KΩ			BTS-330K			Phono Input Shunt

CHASSIS—TOP VIEW

PARTS LIST AND DESCRIPTIONS (Continued)

CONTROLS

ITEM No.	RATING: RESIST.	RATING: WATTS	REPLACEMENT DATA: RCA PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	INSTALLATION NOTES
R1A	1.5 Meg.	½	74639	Q1B-139XX	A7P-95		Volume control tapped at 250KΩ and 50KΩ
B	Shaft		Not Req.	PQ	R8P-2		Attach to R1A per instructions
C	Switch		Not Req.	76-1	S9P-A	B-75	Attach to R1A per instructions
R2	2 Meg.	½	74637	Q1I-139	M-8S-8		Tone control

TRANSFORMER (POWER)

ITEM No.	RATING: PRI.	RATING: SEC.-1	RATING: SEC.-2	RATING: SEC.-3	REPLACEMENT DATA: RCA PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.
T1	117VAC 60~	6.3V 3.95A	5V 2A C.T.	350VAC 6.4 4.2A	73501			

PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: RCA PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	INSTALLATION NOTES
T2	7263Ω C.T.	3.8Ω	400Ω C.T.	.4Ω	73836	A-3823	A-2936	RO-110	

SPEAKER

ITEM No.	RATINGS: FIELD	RATINGS: V. C. IMP.	REPLACEMENT DATA: RCA PART No.	JENSEN PART No.	QUAM PART No.	INSTALLATION NOTES
SP1	PM	3.8Ω	74753			① Replace output transformer to match 6-8Ω voice coil.
	CONE DIA.	V. C. DIA.		MOD. P12-8Q		
SP2	11 3/4"	1"				

R F COILS

ITEM No.	USE	DC RES.: PRI.	DC RES.: SEC.	REPLACEMENT DATA: RCA PART No.	MESSNER PART No.	REMARKS
L1	FM Ant.	0Ω		74616		
L2	FM RF	0Ω		74615		
L3	FM RF	0Ω		74617		
L4	Loop Ant.	1.5Ω		74643		
L5	AM RF	36Ω		74641		Secondary tapped at 5.5Ω
L6	AM Osc.	3.5Ω	3.5Ω	74644		7.5Ω up; 20Ω up coil 2&3
L7A	1st AM IF	8Ω	8Ω	73745		1.3Ω up
B	1st FM IF	3Ω	3Ω			
L8A	2nd AM IF	8Ω	8Ω	74609		
B	2nd FM IF	8Ω	8Ω			
L9	Ratio Det.	.9Ω		73743		
	Trans.		.9Ω			

PHONO CARTRIDGE and NEEDLE

ITEM No.	REPLACEMENT DATA: RCA PART No.	ASTATIC PART No.	SHURE PART No.	REMARKS
		CERAMIC	MEDIO	CERAMIC MEDIO
M1	74625	CC-3 or CC-4	Q-33 "D"	W31AR A65MG
M2	72551			

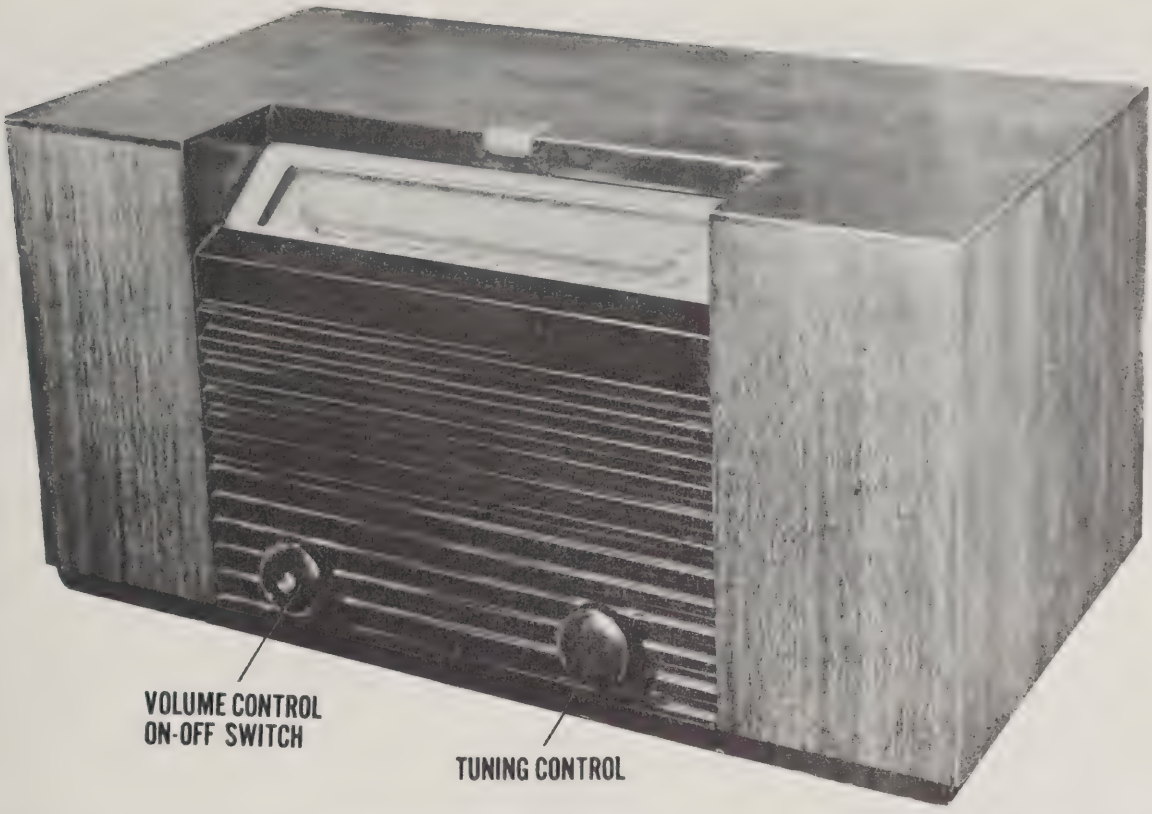
DIAL LIGHTS

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA: RCA PART No.	NOTES
M3	Bayonet	7.5	.2	White	11765	Type #51
M4	Bayonet	7.5	.2	White	11765	Type #51
M5	Bayonet	7.5	.2	White	11765	Type #51

MISCELLANEOUS

ITEM No.	PART NAME	RCA PART No.	NOTES
M6	Switch	74640	Band, Phono
M7	3 Gang Var. Cap.	74642	Tuning
	Dial Scale	74612	
	Dial Pointer	70293	

RCA VICTOR MODEL 8F43 (Ch. RC-1037B)
(BATTERY OPERATED)



RCA VICTOR MODEL 8F43 (Ch. RC-1037B)
(BATTERY OPERATED)

RCA VICTOR MODEL 8F43

TRADE NAME	RCA Victor, Model 8F43 (Ch. RC-1037B)
MANUFACTURER	RCA Victor Div., Radio Corp. of America, Camden, New Jersey
TYPE SET	Battery Operated Superheterodyne Receiver
TUBES (FOUR)	Types 1A7GT Converter, 1N5GT IF Amp., 1H5GT DET-AVC-AF, 3Q5GT Power Output
POWER SUPPLY	1.5 Volts "A" Supply and 90 Volts "B" Supply in Pack Form
RATING	240MA at 1.5 Volts DC and 9.5 MA at 90 Volts DC
TUNING RANGE—BROADCAST	540-1600KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set dial pointer turn tuning gang fully closed and set the pointer to the extreme left hand calibration mark on the dial backplate.

Loop should be maintained in same relative position to chassis as when receiver is in cabinet.

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.1MFD	High side to stator on front section of tuning gang. Low side to chassis.	455KC (400 ∿ Mod.)	Tuning gang fully open	Across voice coil	A1, A2, A3, A4	Adjust for maximum output in the order given. Do not repeat the adjustments.
2.	220MMF	High side to antenna terminal. Low side to chassis.	1600KC	Set pointer to extreme right hand calibration mark.	"	A5	Adjust for maximum output.
3.	220MMF	"	540KC	Set pointer to second calibration mark from left hand end.	"	A6	Adjust for maximum output. Repeat steps 2 and 3 until no further improvement can be made.
4.	220MMF	"	1400KC	Tune for max. output.	"	A7	Adjust for maximum output.
5.	220MMF	"	600KC	"	"	A8	Adjust for maximum output. Repeat steps 4 and 5 until no further improvement can be made.

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PARTS LIST AND DESCRIPTIONS

RCA VICTOR
MODEL 8F43

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RMA BASE TYPE	INSTALLATION NOTES
		RCA PART No.	STANDARD REPLACEMENT		
V1	Converter	1A7GT	1A7GT	7Z	
V2	IF Amp.	1N5GT	1N5GT	5Y	
V3	DET. -AVC-AF	1H5GT	1H5GT	5Z	
V4	Power Output	3Q5GT	3Q5GT	7AQ	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA					IDENTIFICATION CODES AND INSTALLATION NOTES
	CAP.	VOLT	RCA PART No.	AEROVOX PART No.	CENTRALAB PART No.	ERIE PART No.	SPRAGUE PART No.	
C1	10	90	38593	PRS150/12			UT-101	RF Bypass
C2	.1	200	70617	P288-1			TM-1	AVC Filter
C3	.05	400	70615	P488-05			TM-15	Conv. Screen Bypass
C4	120	500	39630	1468-0001	D6-121	GP2K-120	1FM-31	Diode RF Filter
C5	120	500	39630	1468-0001	D6-121	GP2K-120	1FM-31	Diode RF Filter
C6	.002	600	70622	P688-002	D6-202	GP2M-002	TM-22	Audio Coupling
C7	330	500	72571	1468-0003	D6-331	GP2K-330	1FM-335	AF Amp. Plate Bypass
C8	.005	400	70606	P688-005	D6-502	811-005	TM-25	Audio Coupling
C9	.005	400	70606	P688-005	D6-502	811-005	TM-25	Output Plate Bypass
C10	56		73901	CN56KN750	DN-56	GP1K-56	MS-45	Fixed Trimmer

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA				INSTALLATION NOTES
	RESISTANCE	WATTS	RCA PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	
R1A	1 Meg.	½	71168	Q13-137	M-63-Z	B-70-S	Volume control -See note
B	Switch		Not Req.	76-2	SW-A2	Not Req.	Attach to R1A per instructions

Note. Install a 50KΩ resistor in series with the right hand terminal of the control and the lead connecting to the same terminal of the original control. (control viewed from shaft end, terminals down.)

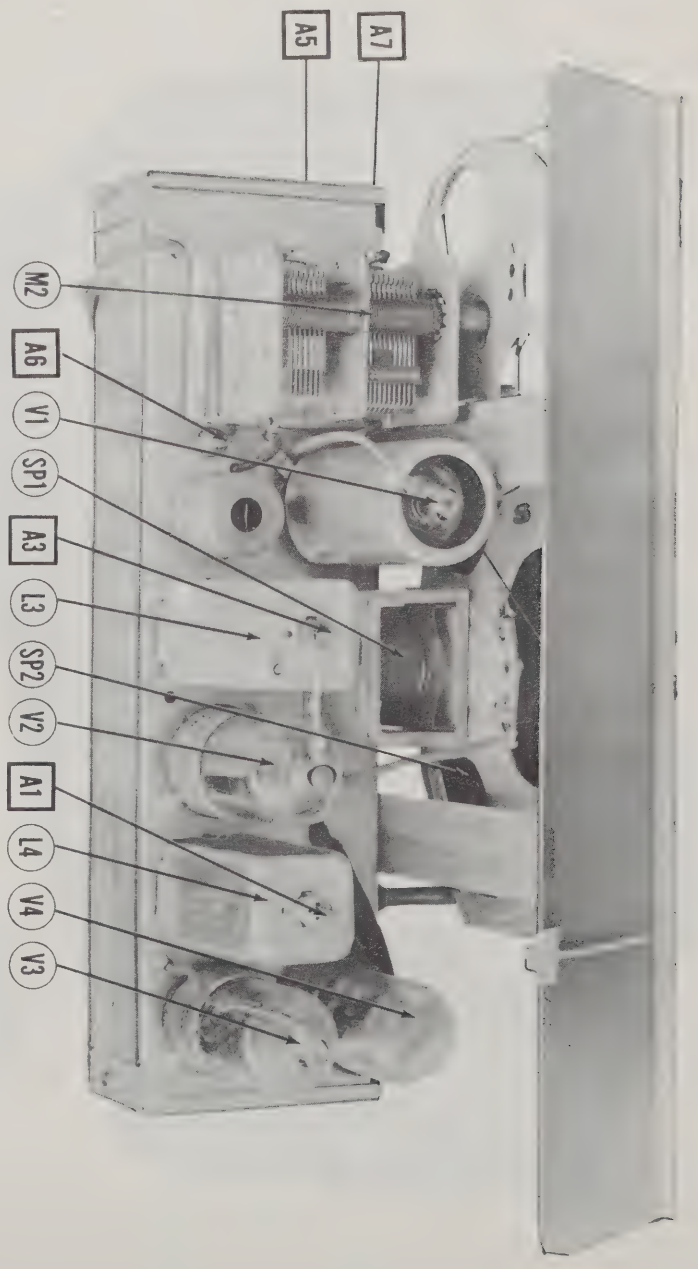
RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	RCA PART No.	IRC PART No.	
R2	3.3 Meg.	½		BTS-3.3 Meg.	AVC Network
R3	220KΩ	½		BTS-220K	Osc. Grid
R4	68KΩ	½		BTS-68K	Conv. Screen
R5	10 Meg.	½		BTS-10 Meg.	AVC Network
R6	10 Meg.	½		BTS-10 Meg.	AF Amp. Grid
R7	1 Meg.	½		BTS-1 Meg.	AF Amp. Plate
R8	2.2 Meg.	½		BTS-2.2 Meg.	Output Grid
R9	470Ω	½		BTS-470	Bias Network

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		RCA PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
	PRI.	SEC.	PRI.	SEC.					
T1	10KΩ	3.8Ω	400Ω	.4Ω	71047	A-3879 ①	A-2932 ①	RO-16 ①	① Bend mounting tabs down, file out slots and mount in same holes.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA RCA PART No.	VIKING PART No.	QUAM PART No.	INSTALLATION NOTES
	FIELD	V. C. IMP.				③ Use universal mounting bracket provided.
SP1	PM	4.1Ω	71058	46J6 ④	46A07 ③	④ Fabricate new mounting bracket.
	CONE DIA.	V. C. DIA.				
SP2	4 x 6	9/16"				

R F COILS

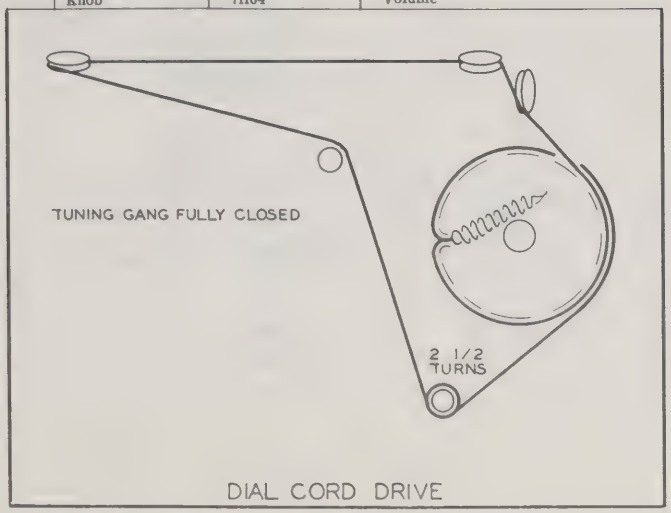
ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA RCA PART No.	REPLACEMENT DATA MEISSNER PART No.	
L1	Ant. Coil	16Ω	4Ω	71404	14-1071	Complete with adj. core and stud
L2	Osc. Coil	1.5Ω	4.5Ω	71401	14-1074	Complete with adj. core and stud
L3	1st IF	16Ω	15.5Ω	71403	16-6666	
L4	2nd IF	14Ω	15Ω	71400		

BATTERIES

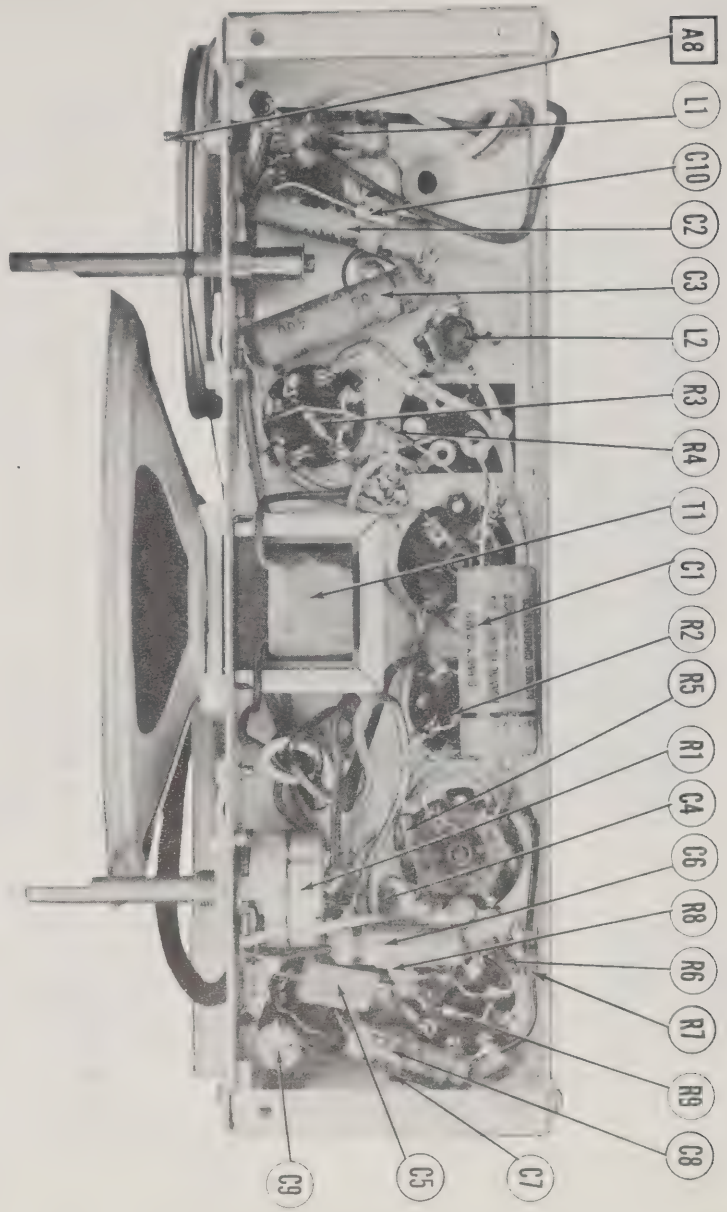
ITEM No.	VOLTAGE	RCA PART No.	REPLACEMENT DATA EVEREADY "A"	EVEREADY "B"	EVEREADY "A-B"	BURGESS "A"	BURGESS "B"	BURGESS "A-B"	INSTALLATION NOTES
M1	1.5V "A" 90V "B"	V5022			758 or 759			17GD60	

MISCELLANEOUS

ITEM No.	PART NAME	RCA PART No.	NOTES
M1	2 Gang Var. Cap.	73884	(31-347MMF, 21-202MMF)
	Dial Pointer	73886	
	Dial Scale	73888	Glass
	Knob	70473	Tuning
	Knob	71164	Volume

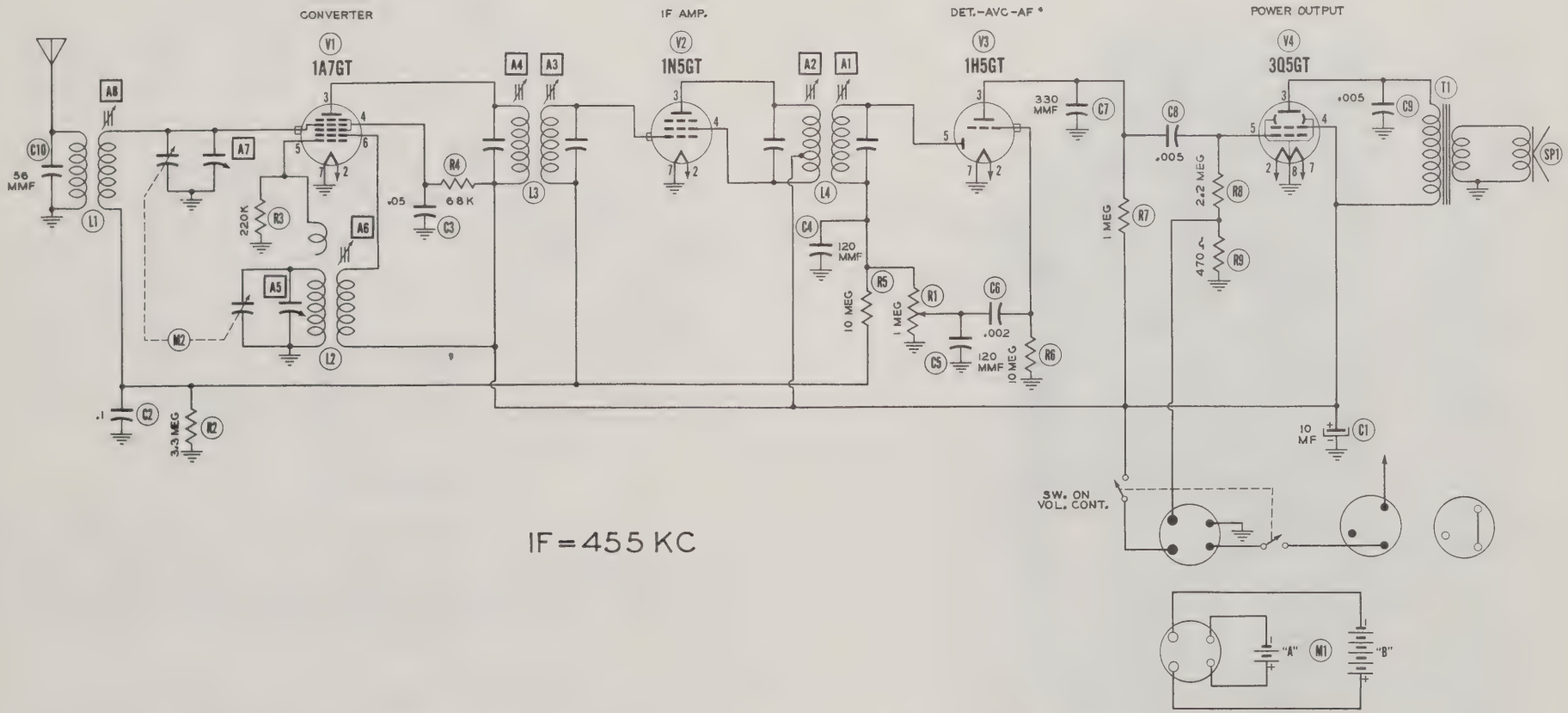


CHASSIS—BOTTOM VIEW



RCA VICTOR MODEL 8F43

RCA VICTOR MODEL 8F43



IF = 455 KC

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Top Cap
V 1	1A7GT	0V.	1.5VDC	85VDC	45VDC	§-7VDC	85VDC	0V.	0V.	0V.
V 2	1N5GT	0V.	1.5VDC	85VDC	85VDC	-.1VDC	0V.	0V.	0V.	0V.
V 3	1H5GT	0V.	1.5VDC	60VDC	0V.	-.4VDC	-5VDC	0V.	0V.	0V.
V 4	3Q5GT	0V.	1.5VDC	80VDC	85VDC	-.8VDC	0V.	1.5VDC	0V.	

§ TAKEN WITH VACUUM TUBE VOLTMETER.

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Top Cap
V 1	1A7GT	0Ω	*	†16Ω	†68KΩ	220KΩ	†1.5Ω	*	0Ω	3.3 Meg.
V 2	1N5GT	0Ω	*	†14Ω	†.4Ω	2.5KΩ	Inf.	*	Inf.	2.5 Meg.
V 3	1H5GT	0Ω	*	†1 Meg.	Inf.	1 Meg.	470Ω	*	1 Meg.	10 Meg.
V 4	3Q5GT	0Ω	*	†400Ω	†0Ω	2.2 Meg.	Inf.	*	*	

† MEASURED FROM PIN 4 OF V4.
* DO NOT USE OHMMETER TO MEASURE FILAMENT RESISTANCE.

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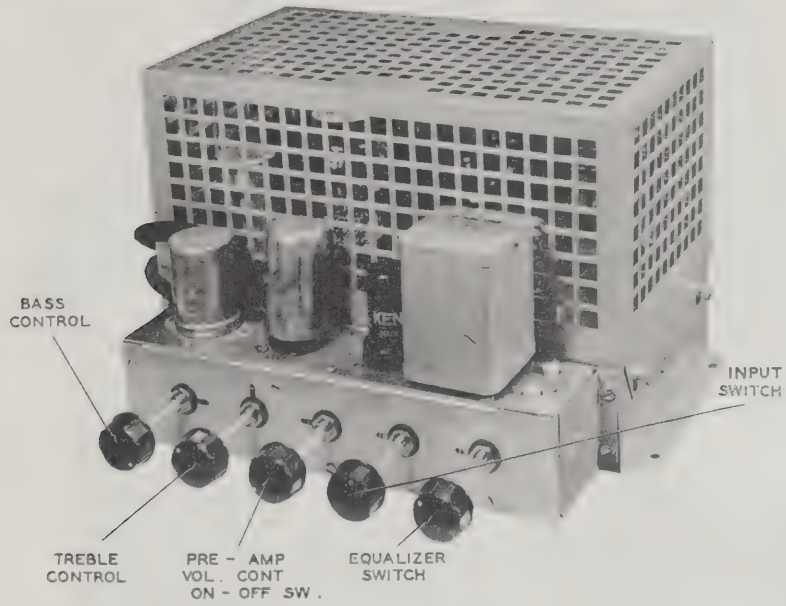
97-13

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Nominal tolerance on component values makes possible a variation of ± 15% in voltage and resistance readings.
5. Volume control at maximum, no signal applied for voltage measurements.

RAULAND
MODEL 1825



RAULAND MODEL 1825

TRADE NAME	Rauland, Model 1825
MANUFACTURER	The Rauland-Borg Corp., 3523 W. Addison St., Chicago 18, Illinois
TYPE SET	AC Operated Audio Amplifier
TUBES (SIX)	Types 6SC7 Pre Amp., 6SN7GT AF Amp., 6SL7GT Phase Inv.-AF Amp., (2) 6L6 Power Output, 5U4G Rectifier
POWER SUPPLY	110-130 Volts AC RATING .9 Amp. at 117 Volts AC

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	6SC7	0V.	85VDC	-.4VDC	-.4VDC	65VDC	0V.	▲6.3VAC	▲6.3VAC
V 2	6SN7GT	0V.	75VDC	.5VDC	0V.	60VDC	.5VDC	▲6.3VAC	▲6.3VAC
V 3	6SL7GT	12VDC	225VDC	37VDC	0V.	150VDC	2VDC	▲6.3VAC	▲6.3VAC
V 4	6L6	0V.	▲6.3VAC	380VDC	340VDC	0V.	2VDC	▲6.3VAC	24VDC
V 5	6L6	0V.	▲6.3VAC	380VDC	340VDC	0V.	290VDC	▲6.3VAC	24VDC
V 6	5U4G	0V.	400VDC	0V.	340VAC	0V.	340VAC	0V.	400VDC

▲ MEASURED ACROSS FILAMENTS.

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	6SC7	0Ω	†220KΩ	10 Meg.	10 Meg.	†410KΩ	0Ω	200Ω	200Ω
V 2	6SN7GT	5KΩ	†125KΩ	1.5KΩ	3Ω	†150KΩ	1.5KΩ	200Ω	200Ω
V 3	6SL7GT	290KΩ	†115KΩ	80KΩ	330KΩ	†345KΩ	4.7KΩ	200Ω	200Ω
V 4	6L6	0Ω	200Ω	†130Ω	†5KΩ	470KΩ	4.7KΩ	200Ω	200Ω
V 5	6L6	0Ω	200Ω	†130Ω	†5KΩ	470KΩ	†15KΩ	200Ω	200Ω
V 6	5U4G	Inf.	85KΩ	Inf.	70Ω	Inf.	70Ω	Inf.	85KΩ

† MEASURED FROM PIN 2 OF V6.

1. DC Voltage measurements are at 20,000 ohms per volt: AC Voltages measured at 1000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 15% in voltage and resistance readings.
6. All controls at minimum, proper output load connected.

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PARTS LIST AND DESCRIPTIONS

RAULAND MODEL 1825

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: RAULAND PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
V1	Pre Amp.	6SC7	6SC7	8S	
V2	AF Amp.	6SN7GT	6SN7GT	8BD	
V3	Phase Inv. -AF Amp.	6SL7GT	6SL7GT	8BD	
V4	Power Output	6L6	6L6	7AC	
V5	Power Output	6L6	6L6	7AC	
V6	Rectifier	5U4G	5U4G	5T	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: RAULAND PART No.	AEROVOX PART No.	CENTRALAB PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	40	450	CE-706A	AF2222J *			TVL-40	▲ Filter
B	10	450		PRS450/30				■ Filter
C	10	450						▲ Filter
D	10	450						Filter
C2	50	25		PRS25/50			TVA-7	Output Cathode Bypass
C3	50	25		PRS25/50			TVA-7	AF Amp. Cathode Bypass
C4A	15	450	CE-406F	AF444J			EL-300	▲ Decoupling
B	15	450						■ Decoupling
C	10	450						▲ Decoupling
C5	8	450	CE-805B	PRS450/8			UT-8	Pre-Amp. Decoupling
C6A	40	25		PRS150/40-40			TA-440	AF Amp. Cathode Bypass
B	40	25						AF Amp. Cathode Bypass
C7	.05	600		P688-05			TM-15	Audio Coupling
C8	500	500		1468-0005	D6-501	GP2K-500	1FM-35	Tone Compensation
C9	.05	600		P688-05			TM-15	Audio Coupling
C10	500	500		1468-0005	D6-501	GP2K-500	1FM-35	AF Feedback
C11	.01	600		P688-01	D6-103	821-01	TM-11	Audio Coupling
C12	.1	600		P688-1			TM-1	Audio Coupling
C13	.002	600		P688-002	D6-202	GP2M-002	TM-22	Tone Compensation
C14	.03	600		P688-03			TM-13	Tone Compensation
C15	.02	600		P688-02			TM-12	Tone Compensation
C16	.002	600		P688-002	D6-202	GP2M-002	TM-22	Tone Compensation
C17	.05	600		P688-05			TM-15	Tone Compensation
C18	.01	600		P688-01	D6-103	821-01	TM-11	Audio Coupling
C19	.02	600		P688-02			TM-12	Audio Coupling
C20	.05	600		P688-05			TM-15	Audio Coupling
C21	.05	600		P688-05			TM-15	Audio Coupling
C22	220	500		1468-00025	D6-221	GP2K-220	1FM-325	AF Amp. Plate Bypass
C23	.05	600		P688-05			TM-15	Line Filter

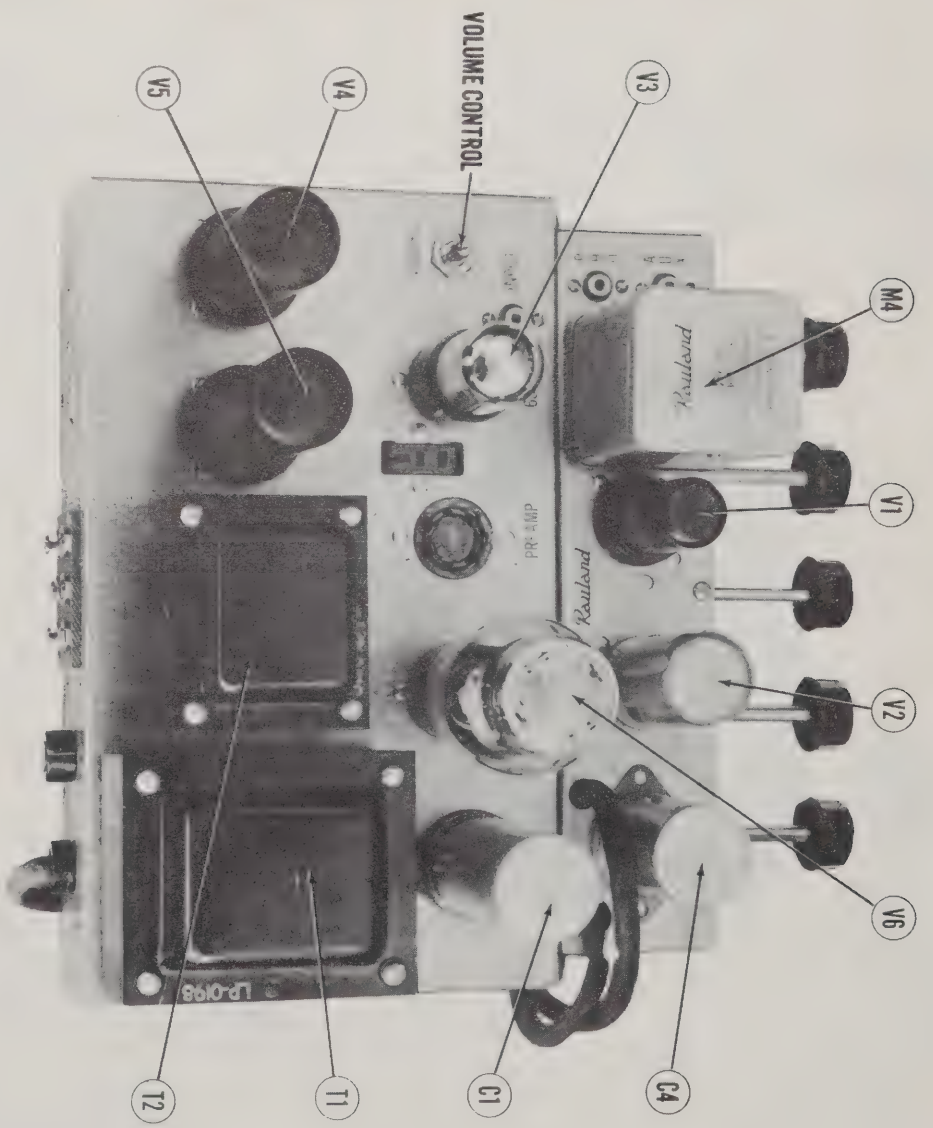
* Parallel sections to obtain desired capacity.

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: RAULAND PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	INSTALLATION NOTES
R1A	250KΩ		RP-254L				Bass control
B	250KΩ						Bass control
R2	200KΩ		RP-204A		T-44 #	BT-53	Treble control tapped at 100KΩ
R3A	500KΩ		RP-504AA	Q13-133	M-60-Z	B-60-S	Pre Amp. volume control
B	Switch		Not Req.	76-1	SW-A	Not Req.	Attach to R3A per instructions
R4A	500KΩ		RP-504B	Q13-133	AM-60-Z	BSK-60	Volume control
B	Shaft		Not Req.	Not Req.	KSS-3	Not Req.	Attach to R4A per instructions

Use 125KΩ tap on this control.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	RAULAND PART No.	IRC PART No..	
R5	10 Meg.	½		BTS-10 Meg.	Pre Amp. Grid
R6	10 Meg.	½		BTS-10 Meg.	Pre Amp. Grid
R7	470KΩ	½		BTS-470K	Tone Compensation
R8	220KΩ	½		BTS-220K	Tone Compensation
R9	100KΩ	½		BTS-100K	Pre Amp. Plate
R10	22KΩ	½		BTS-22K	Pre Amp. Plate Decoupling
R11	150KΩ	½		BTS-150K	Pre Amp. Plate
R12	220KΩ	½		BTS-220K	Tone Compensation
R13	220KΩ	½		BTS-220K	Tone Compensation
R14	22KΩ	½		BTS-22K	Decoupling
R15	22KΩ	½		BTS-22K	Decoupling
R16	470KΩ	½		BTS-470K	1st AF Amp. Grid
R17	1500Ω	½		BTS-1500	1st AF Amp. Cathode
R18	1500Ω	½		BTS-1500	1st AF Amp. Cathode
R19	100KΩ	½		BTS-100K	1st AF Amp. Grid
R20	100KΩ	½		BTS-100K	1st AF Amp. Plate
R21	100KΩ	½		BTS-100K	1st AF Amp. Plate
R22	6800Ω	½		BTS-6800	Tone Compensation
R23	100KΩ	½		BTS-100K	Tone Compensation
R24	8200Ω	½		BTS-8200	Tone Compensation
R25	10KΩ	½		BTS-10K	Decoupling
R26	330KΩ	½		BTS-330K	Volume Control Shunt
R27	220KΩ	½		BTS-220K	2nd AF Amp. Grid
R28	4700Ω	½		BTS-4700	2nd AF Amp. Cathode
R29	22Ω	½		BW-½-22	Feedback Network
R30	150Ω	½		BW-½-150	Feedback Network
R31	330KΩ	½		BTS-330K	2nd AF Amp. Plate
R32	4700Ω	½		BTS-4700	Phase Inv. Cathode
R33	68KΩ	½		BTS-68K	Phase Inv. Cathode
R34	220KΩ	½		BTS-220K	Phase Inv. Grid
R35	100KΩ	½		BTS-100K	Phase Inv. Plate
R36	470KΩ	½		BTS-470K	Output Grid
R37	470KΩ	½		BTS-470K	Output Grid
R38	200Ω	10		AB-200	Output Cathode-Wire Wound
R39	10KΩ	½		BTS-10K	Filter
R40	5000Ω	10		AB-5000	Filter-Wire Wound

TRANSFORMER (POWER)

ITEM No.	RATING				REPLACEMENT DATA			
	PRI.	SEC. 1	SEC. 2	SEC. 3	RAULAND PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.
T1	117VAC @ .9A	640VCT .120ADC	5VAC @ 3A	6.3VCT 2.8A	LP-0198	P-6013 ①	P-2953 ①	PH-120 ① ②

① Add series resistor to reduce plate voltage.
② Drill new mounting holes.

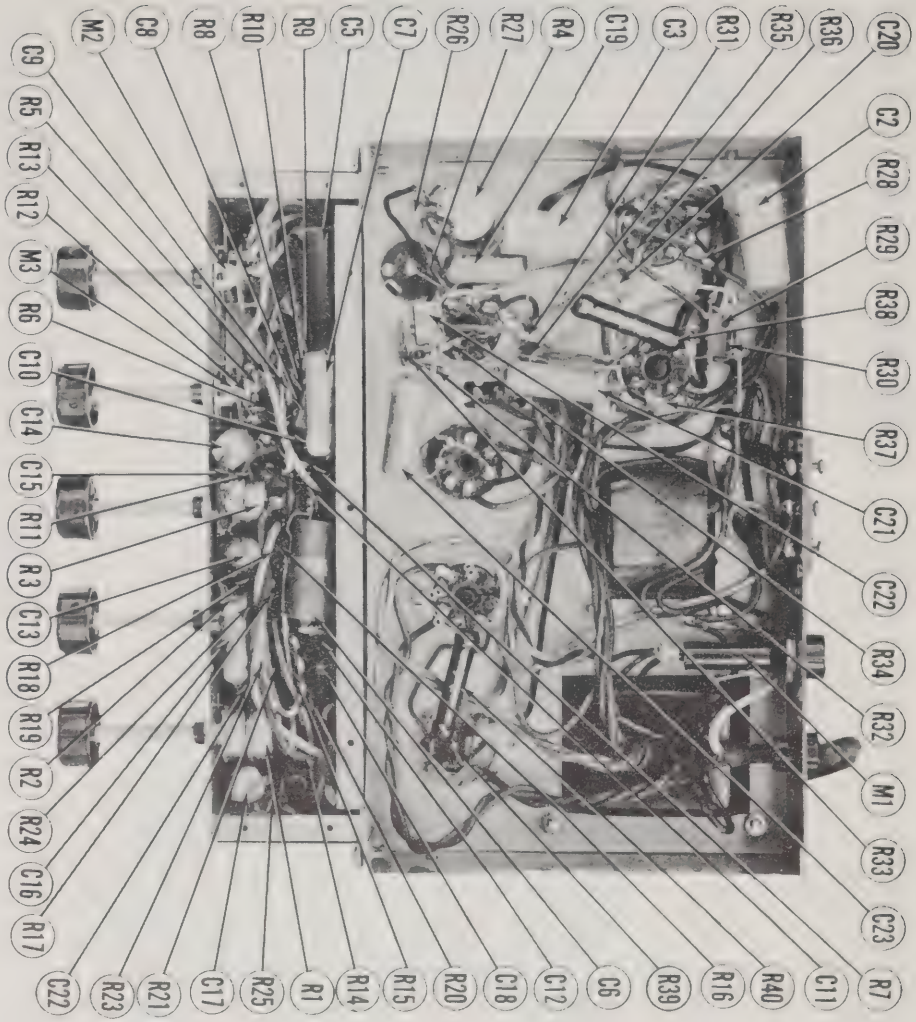
TRANSFORMER (AUDIO OUTPUT)

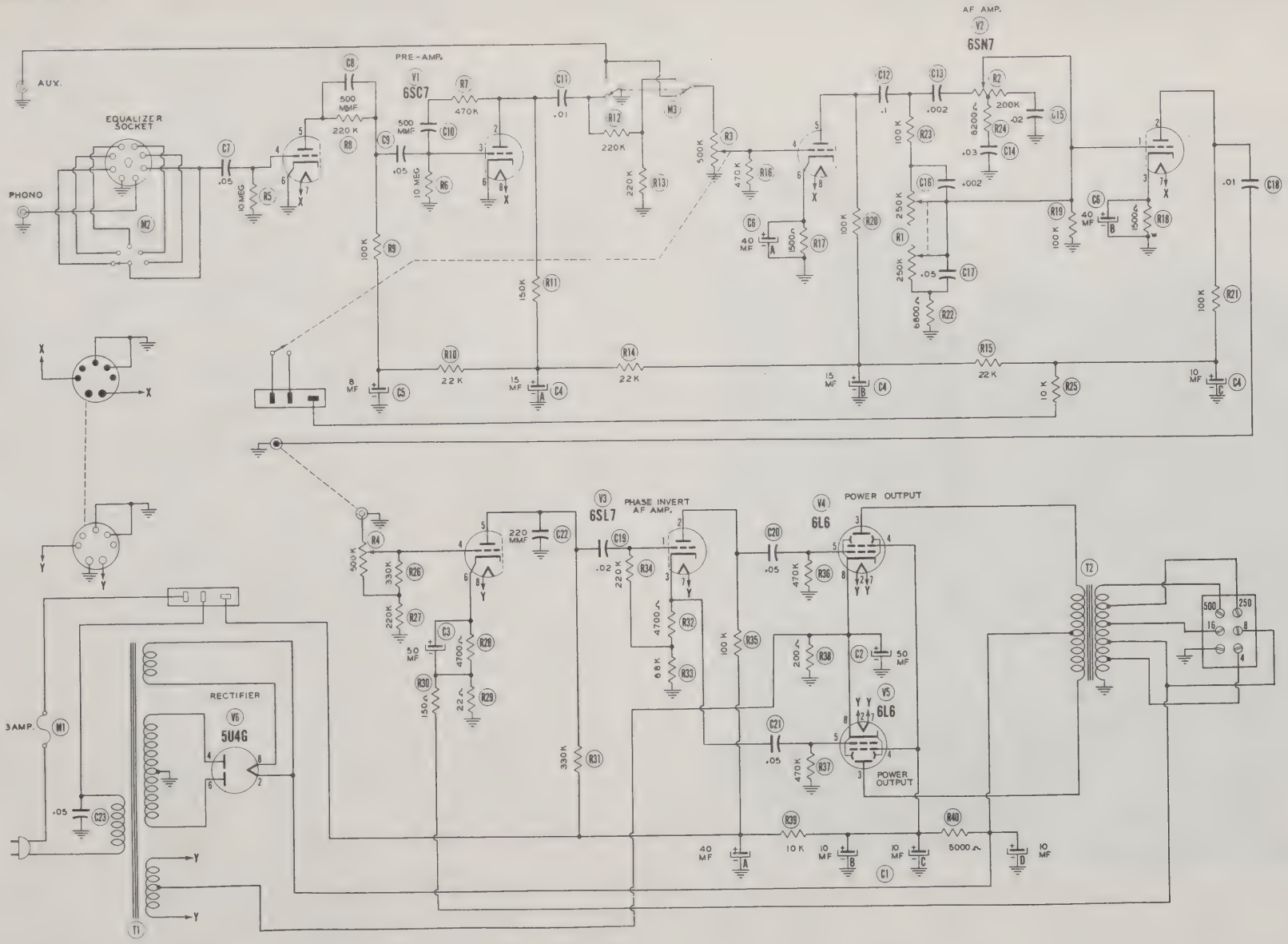
ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		RAULAND PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
	PRI.	SEC.	PRI.	SEC.					
T2	5KΩ CT	500Ω 250Ω 16Ω 8Ω 4Ω	275Ω CT	20Ω 13.7Ω .7Ω .5Ω .4Ω	LO-0120	A-3800 ②		PCO-80 ②	② Drill new mounting holes.

MISCELLANEOUS

ITEM No.	PART NAME	RAULAND PART No.	NOTES
M1	Fuse		Type AGC 3 Amp.
M2	Switch	X-0252	Equalizer
M3	Switch	X-0251	Input Selector
M4A	Equalizer	181	Variable Reluctance Pick-up
B	Equalizer	182	Magnetic Pick-up
C	Equalizer	183	Crystal Pick-up

CHASSIS—BOTTOM VIEW





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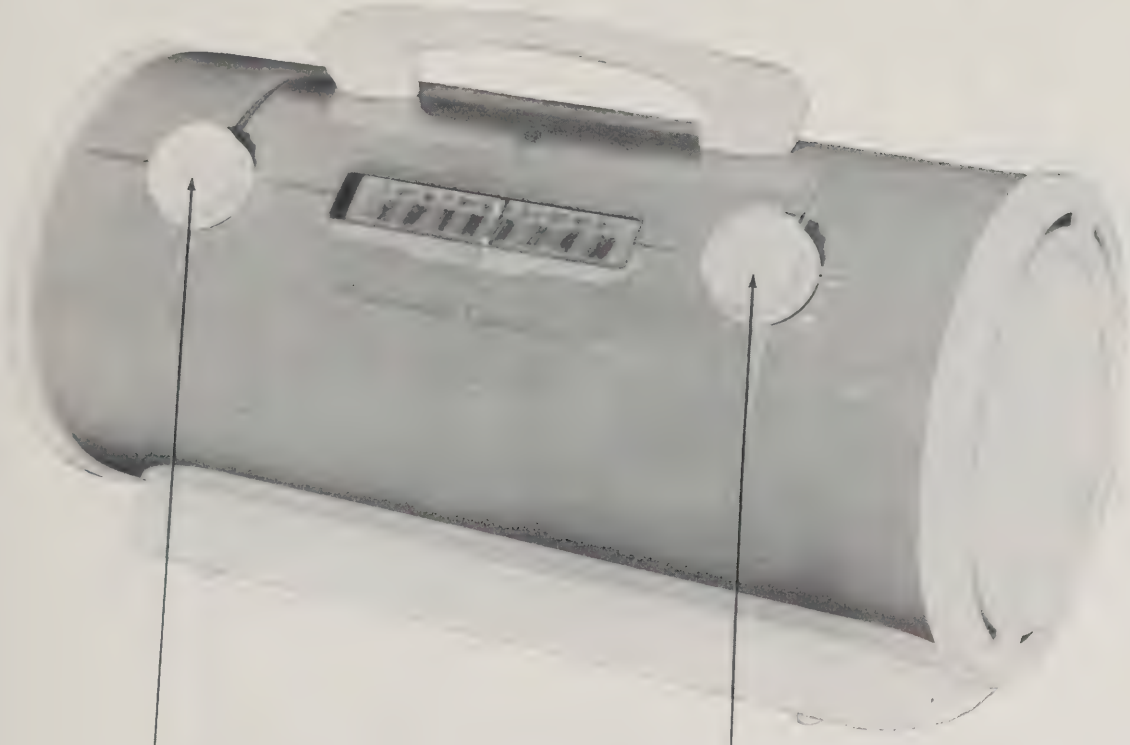
SETCHELL CARLSON
MODEL 570



SETCHELL CARLSON
MODEL 570

SETCHELL CARLSON MODEL 570

TRADE NAME	Setchell Carlson, Model 570
MANUFACTURER	Setchell Carlson Inc., 330 5th Ave., New Brighton, Minn.
TYPE SET	AC-DC Operated Superheterodyne Receiver with Loop Antenna
TUBES (FIVE)	Types 12BE6 Converter, 12BA6 IF Amp., 12AV6 DET-AVC-AF, 50B5 Power Output, 35W4 Rectifier
POWER SUPPLY	110-120 Volts AC-DC — RATING .24 Amp. at 117 Volts AC
TUNING RANGE—BROADCAST	540-1620KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set dial pointer turn tuning gang fully closed and set pointer to the last calibration mark at the left hand end of dial backplate.

Use isolation transformer if available. If not connect a .1MFD capacitor in series with low side of signal generator and B-. Loop should be maintained in same relative position to chassis as when receiver is in cabinet.

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.01MFD	High side to pin 7 (Grid) of 12BE6 (V1). Low side to B-.	455KC (400 ∿ Mod.)	Tuning gang fully open	Across voice coil	A1, A2, A3, A4	Adjust for maximum output. If isolation transformer is not used, reduce dummy antenna to .001MFD to reduce hum modulation.
2.		Loop	1620KC	"	"	A5	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
3.		Loop	1400KC	"	"	A6	"

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PARTS LIST AND DESCRIPTIONS

SETCHELL CARLSON
MODEL 570

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RMA BASE TYPE	INSTALLATION NOTES
		SETCH. CARL. PART No.	STANDARD REPLACEMENT		
V1	Converter	12BE6	12BE6	7CH	
V2	IF Amp.	12BA6	12BA6	7BK	
V3	DET.-AVC-AF	12AV6	12AV6	7BT	
V4	Power Output	50B5	50B5	7BZ	
V5	Rectifier	35W4	35W4	5BQ	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA					IDENTIFICATION CODES AND INSTALLATION NOTES
	CAP.	VOLT	SETCH. CARL. PART No.	AEROVOX PART No.	CENTRALAB PART No.	ERIE PART No.	SPRAGUE PART No.	
C1A	50	150					EL-25	■ Filter
B	50	150						▲ Filter
C2	100			GP100M	D6-101	GP1K-100	1FM-31	Osc. Grid Cap.
C3	.05	200		P288-05			TM-15	AVC Filter
C4	100			GP100M	D6-101	GP1K-100	1FM-31	Diode RF Filter
C5	.01	400		P488-01	D6-103	821-01	TM-11	Audio Coupling
C6	.01	400		P488-01	D6-103	821-01	TM-11	Audio Coupling
C7	.01	400		P488-01	D6-103	821-01	TM-11	Output Plate Bypass
C8	.1	400		P488-1			TM-1	Line Filter
C9	.1	400		P488-1			72P52	Line Isolation-See Note

Note. Not used in all models.

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA				INSTALLATION NOTES
	RESISTANCE	WATTS	Setch. Carl. PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	
R1A	500KΩ	½	570-22	Q13-133		B-60-S	Volume control-See note 1
B	Shaft		Not Req.	PQ		Not Req.	Attach to R1A per instructions
C	Switch		Not Req.	76-1		Not Req.	Attach to R1A per instructions

Note 1. Use original spacer nut, which holds dial cord pulley.

RESISTORS

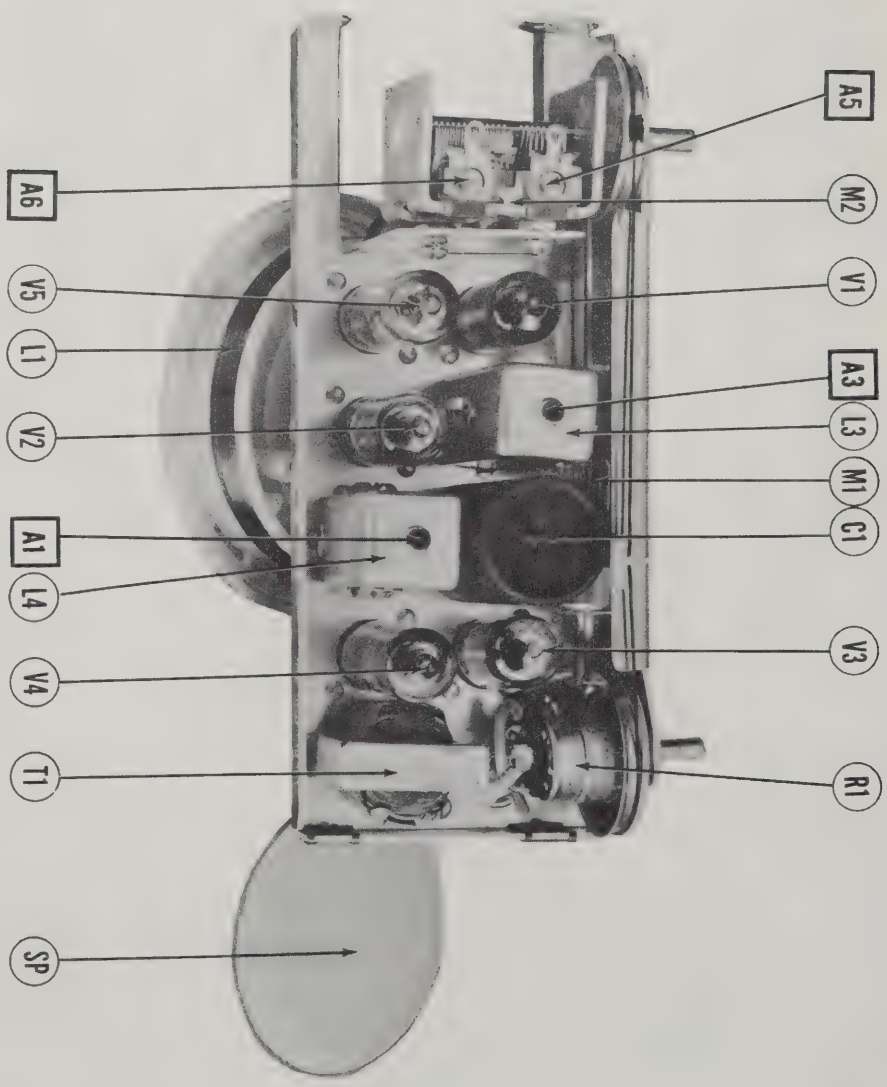
ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	SETCH. CARL. PART No.	IRC PART No.	
R2	25KΩ	½		BTS-27K	Osc. Grid
R3	5.1 Meg.	½		BTS-4.7 Meg.	AVC Network
R4	5.1 Meg.	½		BTS-4.7 Meg.	AF Amp. Grid
R5	510KΩ	½		BTS-470K	AF Amp. Plate
R6	510KΩ	½		BTS-470K	Output Grid
R7	180Ω	½		BW-½-180	Output Cathode-Wire Wound
R8	1500Ω	2		BW-2-1500	Filter
R9	24Ω	½			Rect. Ballast-Wire Wound
R10	100Ω	5		AB-100	Filament Dropping-Wire Wound-See Note 2

Note 2. Not used in all models.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		Setch. Carl. PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
	PRI.	SEC.	PRI.	SEC.					
T1	22KΩ	3.5Ω	175Ω	.4Ω		A-3876 *	A-3025 ¶	RO-2 *	* Bend mounting tabs down and mount in original slots. ¶ Bend one tab down and drill one new hole.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			SETCH. CARL. PART No.	JENSEN PART No.	QUAM PART No	
	FIELD	V. C. IMP.				
SP1	PM	3.5Ω				
	CONE DIA.	V. C. DIA.				
SP2	3"	9/16"				

R F COILS

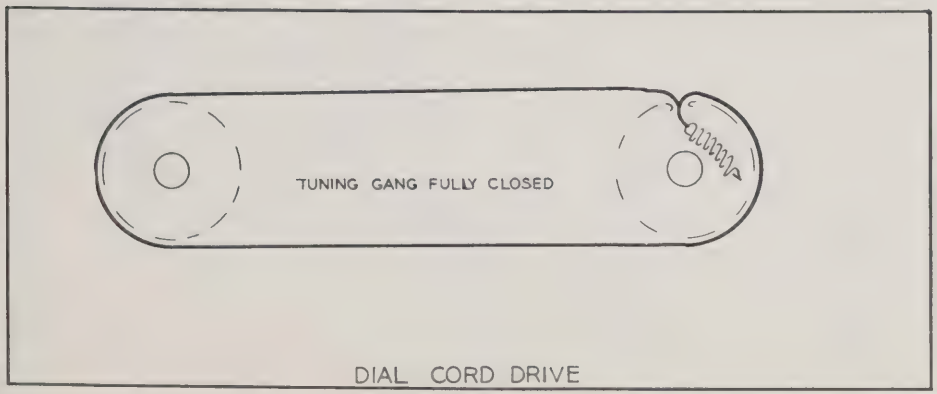
ITEM No.	USE	DC RES.		REPLACEMENT DATA		
		PRI.	SEC.	SETCH. CARL. PART No.	MEISSNER PART No.	
L1	Loop Ant.	5Ω				
L2	Osc. Coil	.5Ω	6Ω		14-1073	
L3	1st IF	11.5Ω	11.5Ω		16-6678	
L4	2nd IF	11.5Ω	11.5Ω		16-6678	

DIAL LIGHTS

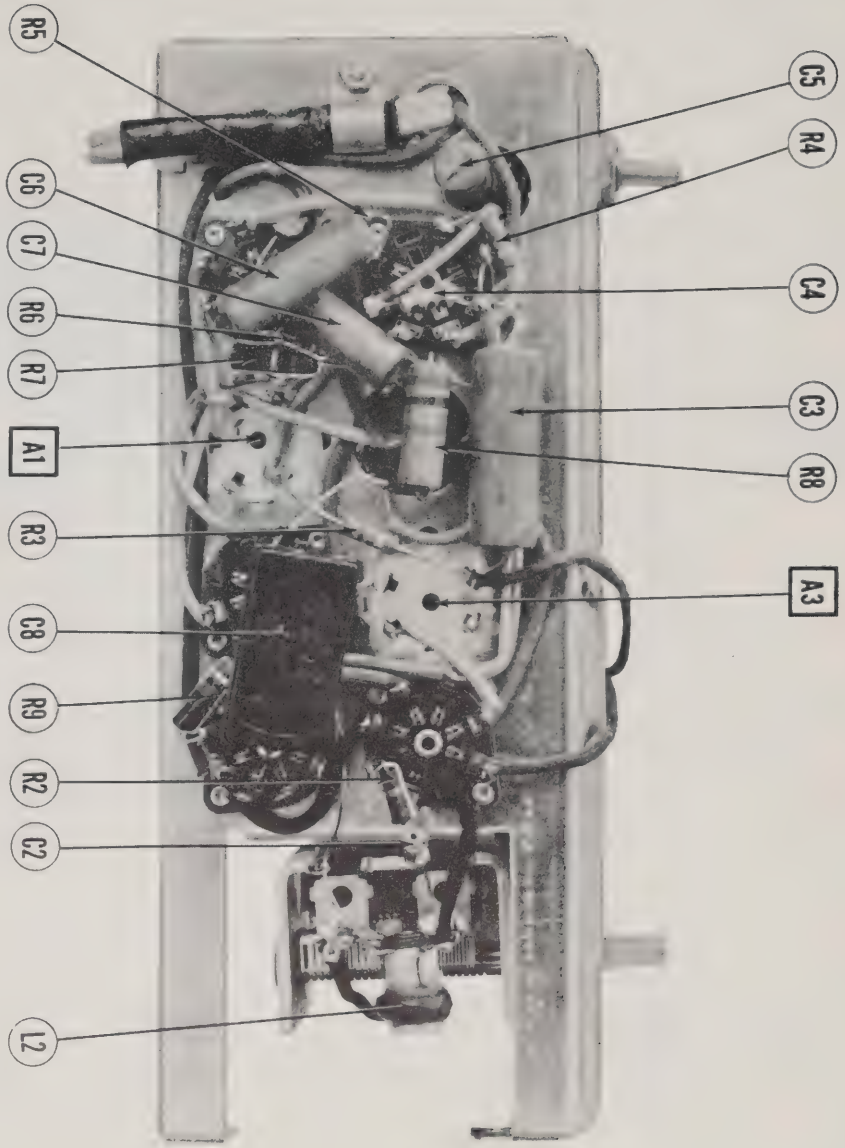
ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		NOTES
					SETCH. CARL. PART No.		
M1	Bayonet	6-8	.25	Blue			Type #44

MISCELLANEOUS

ITEM No.	PART NAME	SETCH. CARL. PART No.	NOTES
M2	2 Gang Var. Cap.		(19-427MMF, 19-157MMF)

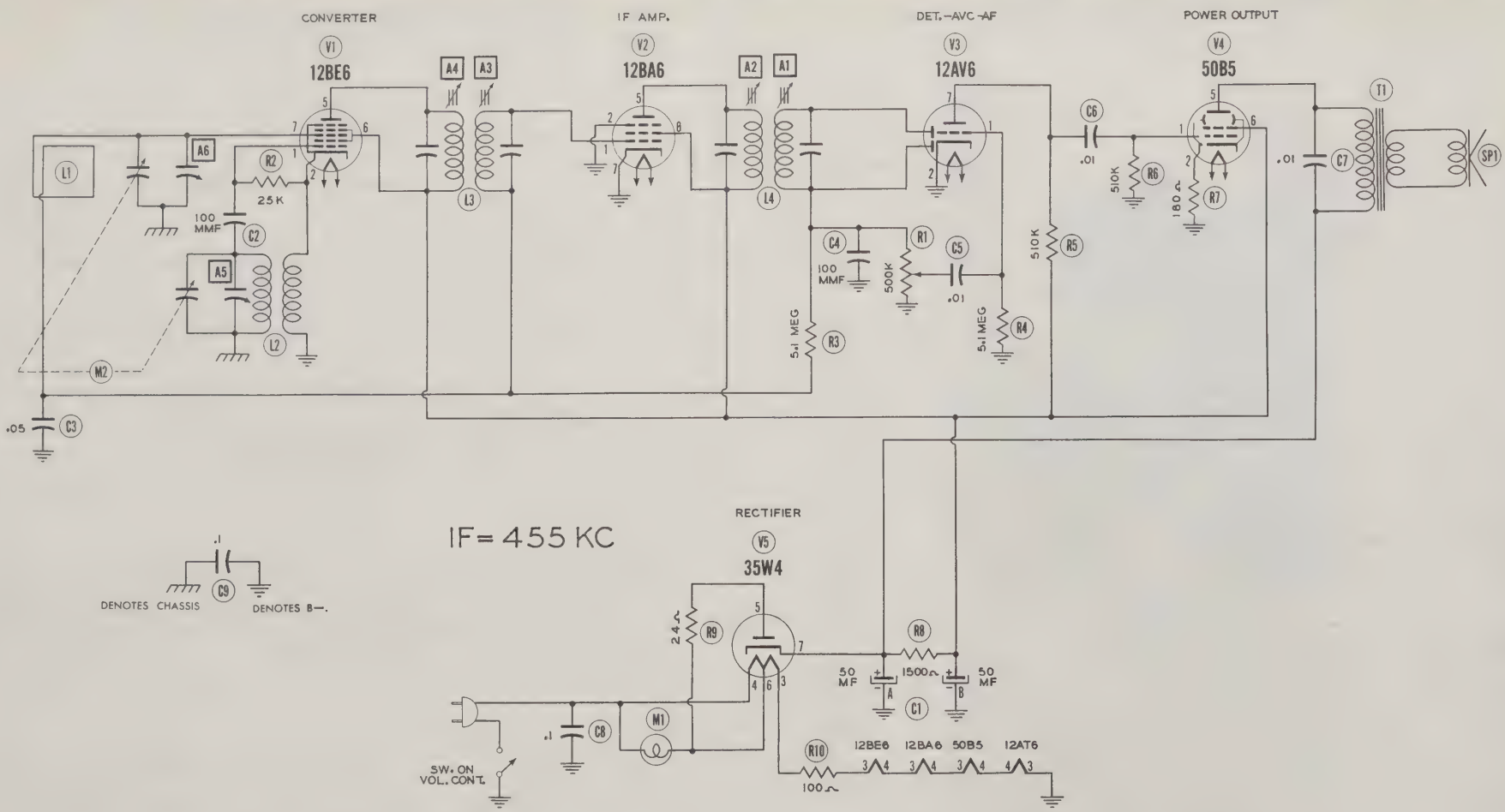


CHASSIS—BOTTOM VIEW



SETCHELL CARLSON MODEL 570

SETCHELL CARLSON MODEL 570



VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V 1	12BE6	§-12VDC	0V.	85VAC	72VAC	95VDC	95VDC	-.5VDC
V 2	12BA6	-1.7VDC	0V.	72VAC	60VAC	95VDC	95VDC	0V.
V 3	12AV6	-.7VDC	0V.	0V.	12VAC	-.6VDC	-.6VDC	43VDC
V 4	50B5	0V.	7VDC	60VAC	12VAC	115VDC	95VDC	0V.
V 5	35W4	0V.	0V.	85VAC	117VAC	112VAC	115VAC	120VDC

§ TAKEN WITH VACUUM TUBE VOLTMETER.

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V 1	12BE6	25KΩ	.5Ω	85Ω	72Ω	†1.5KΩ	†1.5KΩ	5.5 Meg.
V 2	12BA6	5.5 Meg.	0Ω	72Ω	60Ω	†1.5KΩ	†1.5KΩ	0Ω
V 3	12AV6	5.1 Meg.	0Ω	0Ω	12Ω	500KΩ	500KΩ	†500KΩ
V 4	50B5	500KΩ	180Ω	60Ω	12Ω	†175Ω	†1.5KΩ	0Ω
V 5	35W4	Inf.	Inf.	85Ω	115Ω	140Ω	110Ω	50KΩ

† MEASURED FROM PIN 7 OF V5.

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97-15

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

PHOTOFACT* Folder

SILVERTONE MODELS 9115 (CH. 478.224), 9116 (CH. 478.221)

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MODEL 9116

SILVERTONE MODELS 9115 (CH. 478.224), 9116 (CH. 478.221)

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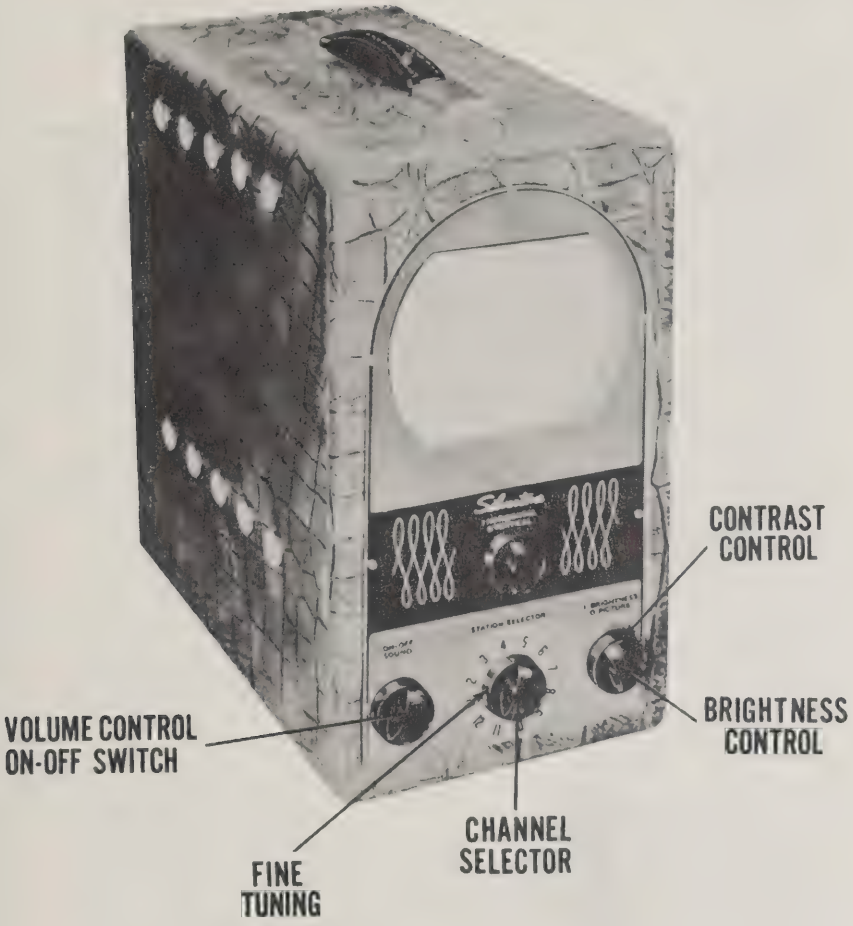

SILVERTONE MODEL 9116

TRADE NAME	Silvertone, Models 9115 (Ch. 478.224), 9116 (Ch. 479.221)
SUPPLIER	Sears Roebuck & Co., 925 S. Homan St., Chicago, Illinois
TYPE SET	Television Receiver
TUBES	Twenty One
POWER SUPPLY	105-125 Volts AC-60 Cycle
RATING	.98 Amp. @ 117 Volts AC
TUNING RANGE	Channels 2 thru 13

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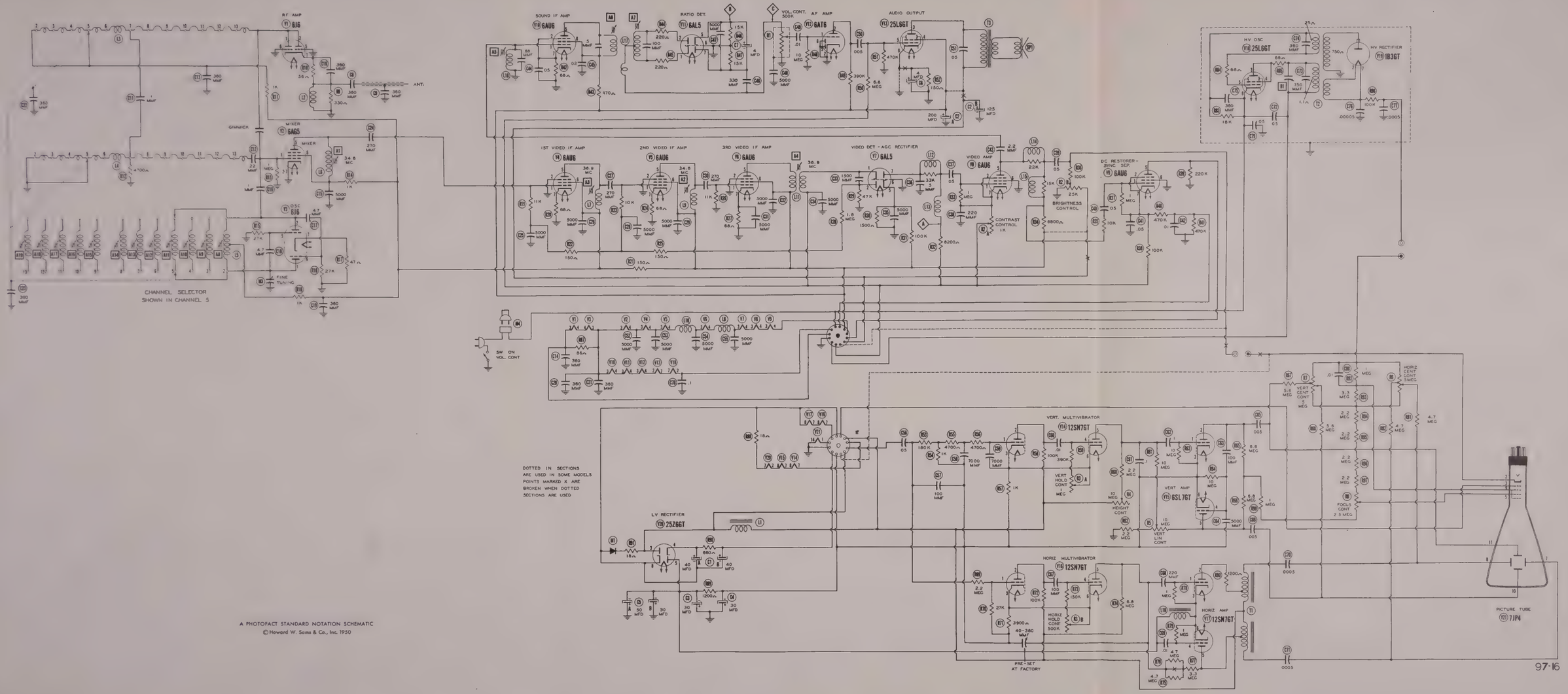
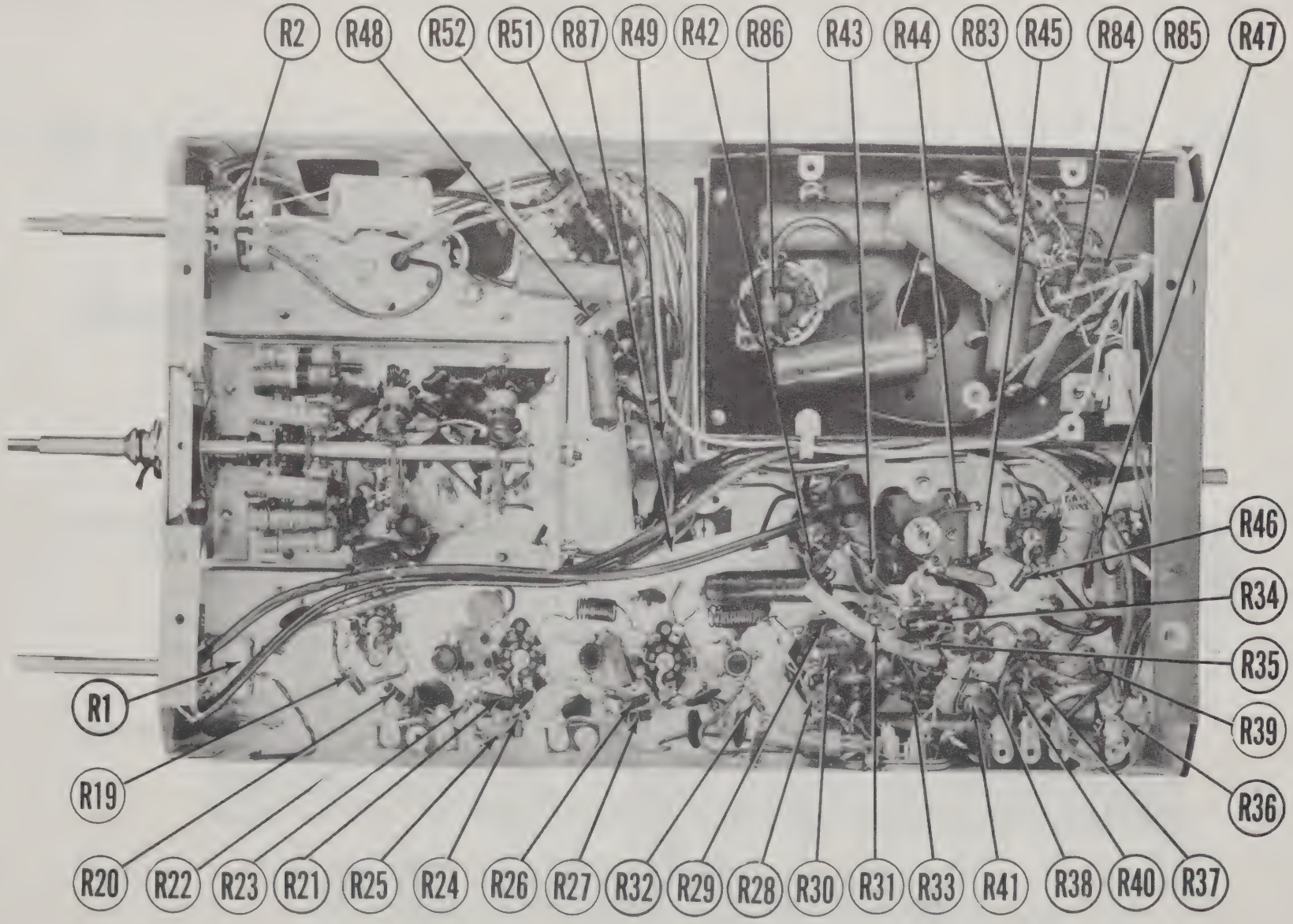
SILVERTONE MODELS 9115
(Ch. 478.224), 9116 (Ch. 478.221)

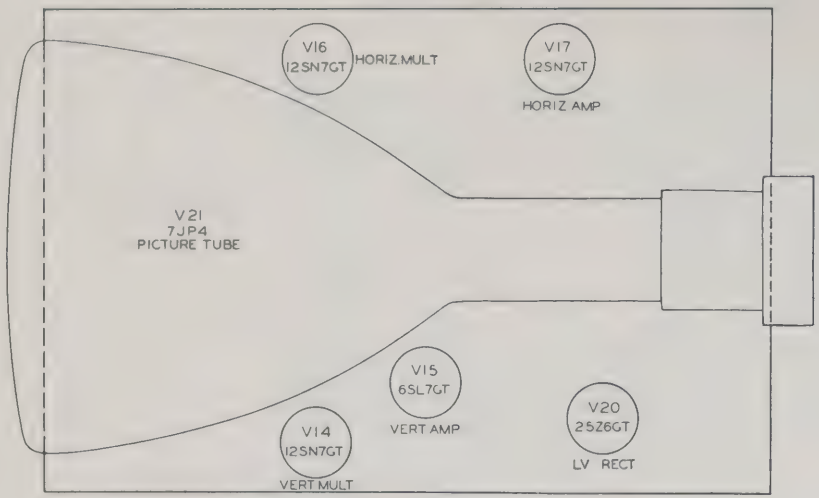


SILVERTONE MODELS 9115
(Ch. 478.224), 9116 (Ch. 478.221)

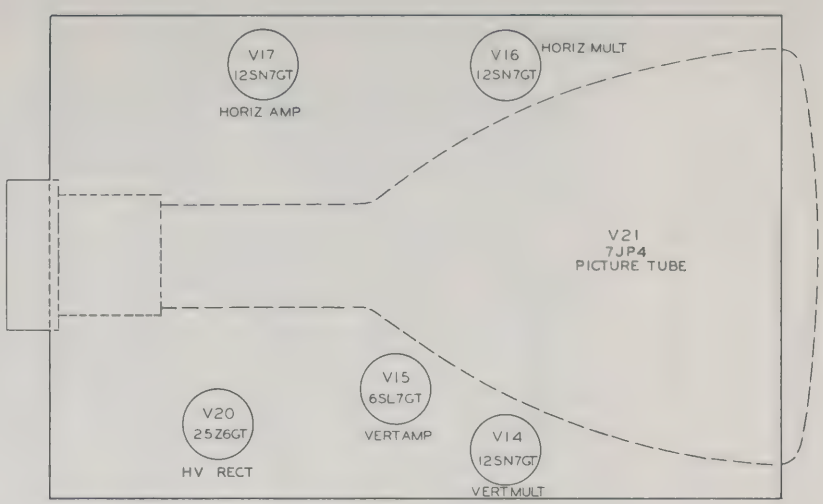
RF-IF CHASSIS–TOP VIEW



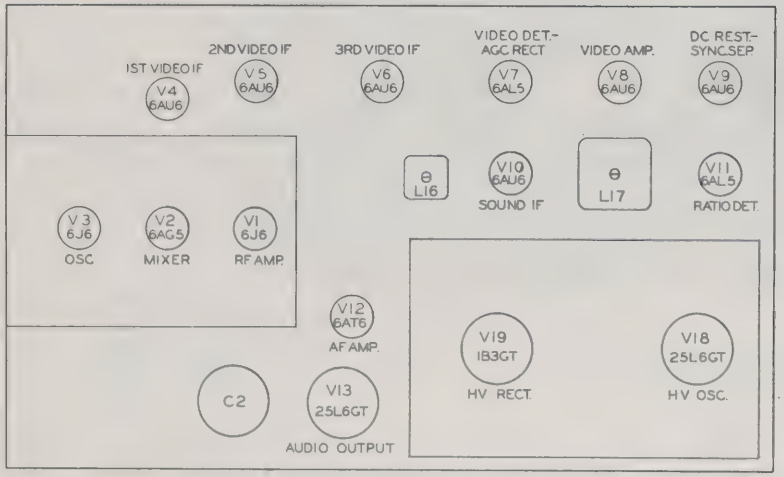
RF-IF CHASSIS-BOTTOM VIEW-RESISTOR IDENTIFICATON

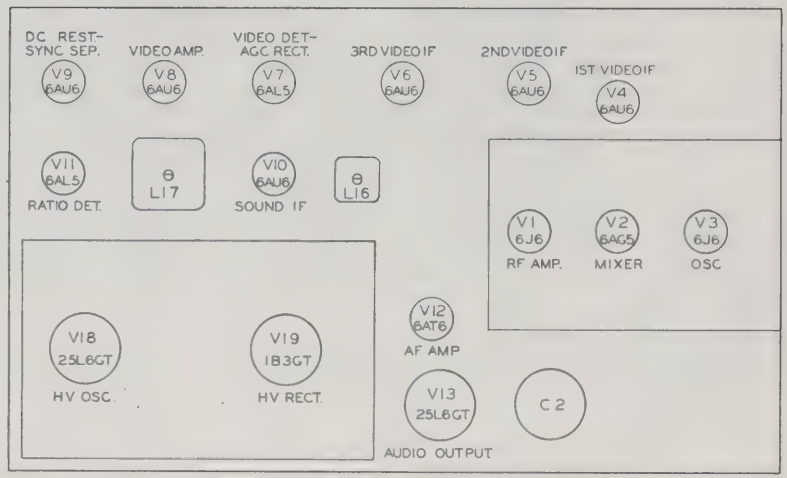


TOP VIEW



BOTTOM VIEW





TUBE PLACEMENT CHART

SILVERTONE MODELS 9115 (Ch. 478.224), 9116 (Ch. 478.221)

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

If the picture tube is removed during alignment, short pins 1 and 14 of the picture tube socket to complete the filament circuit. Use an isolation transformer to protect the test equipment.

VIDEO IF ALIGNMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
1.	Direct	High side to ungrounded tube shield floating over mixer tube (V2). Low side to chassis.	34.8MC (Unmod.)	Any	DC Probe and common leads across R32.	A1, A2	Adjust for maximum deflection.
2.	Direct	"	36.9MC	"	"	A3, A4	"

OVERALL VIDEO IF RESPONSE CHECK

Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection. Set the channel switch to any channel where interference from the local oscillator is minimum. To check for erroneous indications turn the fine tuning control; if the pattern on the scope changes, switch to another channel.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
3.	Direct	High side to ungrounded tube shield floating over mixer tube (V2). Low side to chassis.	35MC (10MC SWP)	32.6MC 34.8MC 36.9MC 37.3MC	See note above	Vert. Amp. to Point ⟨A⟩ Low side to chassis.		Check for response curve similar to Fig 1 with proper marker placement. If necessary retouch A1 and A2 to correct the low frequency end, and A3 and A4 to correct the high frequency end of the response curve.

SOUND IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
4.	.01MFD	High side to pin 1 (Grid) of 6AU6 (V8). Low side to chassis.	4.5MC (Unmod.)	Any channel unused locally.	DC Probe to Point ⟨B⟩ Common to chassis.	A5, A6	Adjust for maximum deflection.
5.	.01MFD	"	"	"	DC Probe to Point C. Common to chassis.	A7	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

SOUND IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60 ~ modulation and 450KC sweep. Use 120 ~ sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
4.	.01MFD	High side to pin 1 (Grid) of 6AU6 (V8). Low side to chassis.	4.5MC (1MC SWP)	4.5MC	Any channel unused locally.	Vert. Amp. to Point ⟨B⟩ Low side to chassis.	A5, A6	Adjust for maximum amplitude and symmetry as per Fig 2.
5.	.01MFD	"	"	"	"	Vert. Amp. to Point ⟨C⟩ Low side to chassis.	A7	Adjust A7 so 4.5MC occurs at center of crossover lines as per Fig 3. SLIGHTLY retouch A6 for maximum amplitude and straightness of crossover lines.

OSCILLATOR ALIGNMENT

The RF and mixer circuits in this tuner are pre-set at the factory and are very stable and normally should not require adjustment in the field. Set the fine tuning control to the mid-position of its range.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
6.	Direct	High side to center conductor of antenna input cable. Low side to outer shield.	57MC (10MC SWP)	55.25MC 59.75MC	2	Vert. Amp. to Point ⟨A⟩ Low side to chassis.	A8	Adjust to place sound marker as shown in Fig 4. The video marker should fall between 45 and 60% on opposite side of response curve. If the video marker does not fall within the proper range on ALL channels, switch to channel 6 and make slight adjustments of video IF coils A1, A2, A3 and A4 to obtain proper results.
			63MC (10MC SWP)	61.25MC 65.75MC	3		A9	
			69MC (10MC SWP)	67.25MC 71.75MC	4		A10	
			79MC (10MC SWP)	77.25MC 81.75MC	5		A11	
			85MC (10MC SWP)	83.25MC 87.75MC	6		A12	
			177MC (10MC SWP)	175.25MC 179.75MC	7		A13	
			183MC (10MC SWP)	181.25MC 185.75MC	8		A14	
			189MC (10MC SWP)	187.25MC 191.75MC	9		A15	
			195MC (10MC SWP)	193.25MC 197.75MC	10		A16	
			201MC (10MC SWP)	199.25MC 203.75MC	11		A17	
			207MC (10MC SWP)	205.25MC 209.75MC	12		A18	
			213MC (10MC SWP)	211.25MC 215.75MC	13		A19	

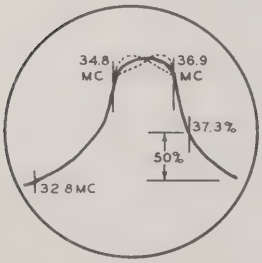


FIG. 1

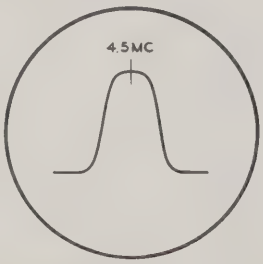


FIG. 2

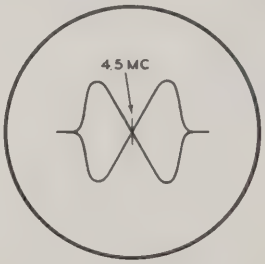


FIG. 3

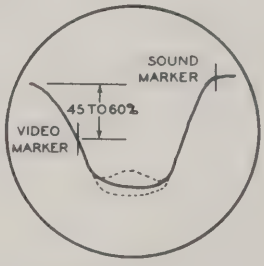


FIG. 4

RF-IF CHASSIS-TRANS., INDUCTOR AND ALIGNMENT IDENTIFICATION

VOLTAGE AND RESISTANCE MEASUREMENTS

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6J6	90VDC	90VDC	7VAC	14VAC	0V.	0V.	.9VDC		
V 2	6AG5	-5.3VDC	0V.	21VAC	27VAC	100VDC	100VDC	0V.		
V 3	6J6	85VDC	85VDC	21VAC	14VAC	§-2.7VDC	§-2.4VDC	.3VDC		
V 4	6AU6	-.1VDC	0V.	27VAC	34VAC	105VDC	105VDC	.5VDC		
V 5	6AU6	-.2VDC	0V.	34VAC	41VAC	110VDC	110VDC	.5VDC		
V 6	6AU6	0V.	0V.	41VAC	48VAC	110VDC	110VDC	.8VDC		
V 7	6AL5	■0V.	0V.	48VAC	54VAC	1.7VDC	0V.	■-1.8VDC		
V 8	6AU6	■.2VDC	■9.4VDC	54VAC	60VAC	■180VDC	■125VDC	■9.4VDC		
V 9	6AU6	■ 1VDC	90VDC	60VAC	66VAC	■90VDC	■125VDC	■90VDC		
V 10	6AU6	0V.	.6VDC	21VAC	27VAC	100VDC	100VDC	.6VDC		
V 11	6AL5	0V.	0V.	27VAC	34VAC	.2VDC	0V.	-.2VDC		
V 12	6AT6	-.4VDC	0V.	34VAC	40VAC	0V.	0V.	50VDC		
V 13	25L6GT	0V.	40VAC	95VDC	105VDC	.1VDC	0V.	65VAC	7.3VDC	
V 14	12SN7GT	■0V.	■50VDC	■1.5VDC	■-9VDC	■7VDC ■20VDC	■1.5VDC	66VAC	79VAC	
V 15	6SL7GT	■-4.5VDC	■310VDC	■0V.	■-.9VDC	■290VDC ■320VDC	■0V.	79VAC	85VAC	
V 16	12SN7GT	■0V.	■105VDC	■4.7VDC	■-.2VDC	■17VDC	■4.7VDC	90VAC	104VAC	
V 17	12SN7GT	#-.9VDC	#220VDC	#1.1VDC	#-2.6VDC	#235VDC	#1.1VDC	104VAC	117VAC	
V 18	25L6GT	¶-43VDC	90VAC	¶215VDC	¶215VDC	¶-43VDC	¶218VDC	65VAC	¶0V.	
V 19	1B3GT	* DO NOT MEASURE.								
V 20	25Z6GT	0V.	85VAC	117VDC	260VAC	-130VDC	0V.	110VAC	117VAC	
V 21	7JP4	PIN 1	PIN 2	PIN 3	PIN 5	PIN 7	PIN 8	PIN 9	PIN 10	PIN 11	PIN 14
		7VAC	105VDC	-14VDC	*	*	*	*	*	*	0V.

§ TAKEN WITH VACUUM TUBE VOLTMETER.
■ MEASURED FROM PIN 3 OF V15.
MEASURED FROM PIN 5 OF V20.
¶ MEASURED FROM PIN 8 OF V18.
* DO NOT MEASURE.

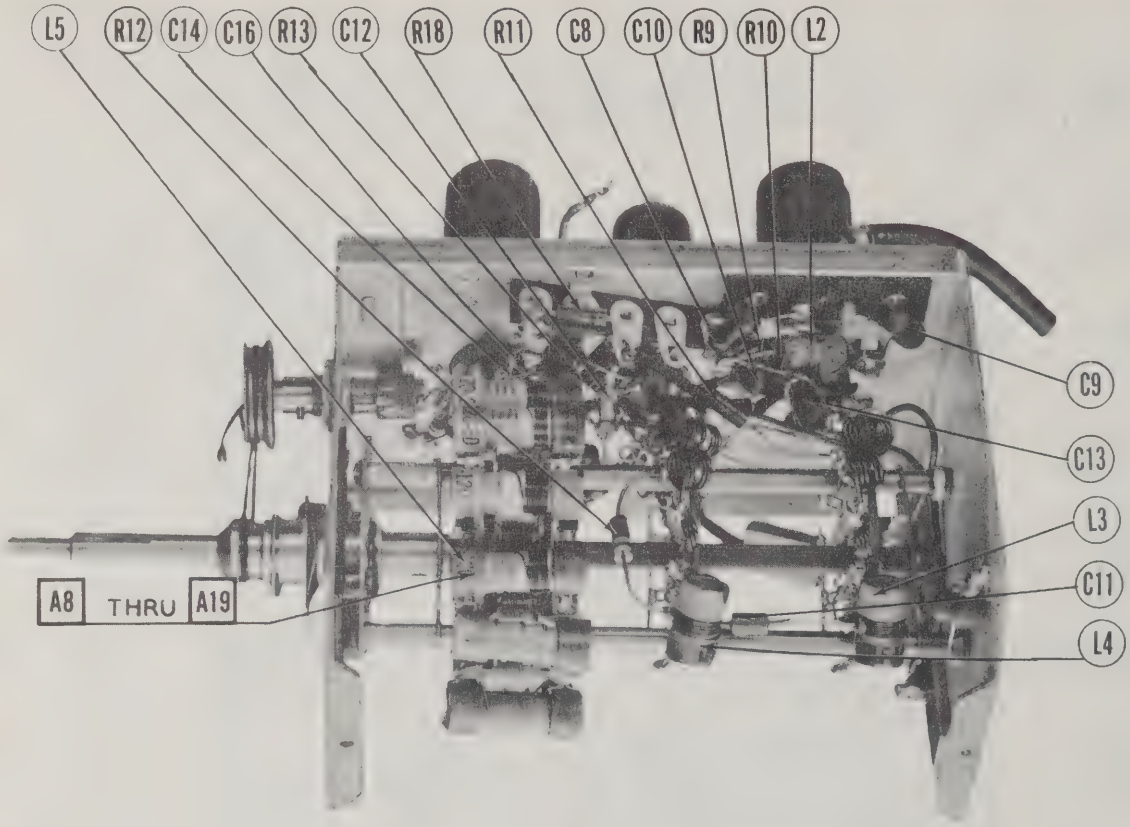
RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6J6	†1.2KΩ	†1.2KΩ	1.5Ω	4Ω	0Ω	0Ω	56Ω		
V 2	6AG5	1 Meg.	0Ω	5.5Ω	8.5Ω	†1.2KΩ	†1.2KΩ	0Ω		
V 3	6J6	†1.2KΩ	†1.2KΩ	5.5Ω	4Ω	27KΩ	27KΩ	47Ω		
V 4	6AU6	1.8 Meg.	0Ω	8.5Ω	13Ω	†250Ω	†250Ω	68Ω		
V 5	6AU6	1.8 Meg.	0Ω	13Ω	16Ω	†100Ω	†100Ω	68Ω		
V 6	6AU6	11KΩ	0Ω	16Ω	20Ω	†100Ω	†100Ω	68Ω		
V 7	6AL5	■.2Ω	47KΩ	20Ω	22Ω	1.5KΩ	0Ω	■8.2KΩ		
V 8	6AU6	■1 Meg.	■ 1000Ω	22Ω	25Ω	†6.8KΩ	0Ω	■ 1000Ω		
V 9	6AU6	■ 1 Meg.	■ 100KΩ	25Ω	27Ω	220KΩ	0Ω	■ 100KΩ		
V 10	6AU6	1.5Ω	68Ω	5.5Ω	10Ω	†570Ω	†570Ω	68Ω		
V 11	6AL5	500KΩ	500KΩ	10Ω	13Ω	15KΩ	0Ω	15KΩ		
V 12	6AT6	10 Meg.	0Ω	13Ω	16Ω	0Ω	0Ω	†390KΩ		
V 13	25L6GT	0Ω	16Ω	†300Ω	†100Ω	470KΩ	Inf.	24Ω	150Ω	
V 14	12SN7GT	■10.5KΩ	†100KΩ	■ 1000Ω	■ 390KΩ	†5 Meg. †1.8 Meg.	■1000Ω	27Ω	30Ω	
V 15	6SL7GT	■ 10 Meg.	♦22 Meg.	■0Ω	■ 10 Meg.	♦ 22 Meg.	■0Ω	30Ω	31Ω	
V 16	12SN7GT	■27KΩ	†100KΩ	■3.9KΩ	■650KΩ	†2 Meg.	■ 3.9KΩ	30Ω	31Ω	
V 17	12SN7GT	# 1 Meg.	†1.5KΩ	#38Ω	# 1 Meg.	†300Ω	#38Ω	31Ω	31.5Ω	
V 18	25L6GT	¶18KΩ	30Ω	▲750Ω	▲750Ω	¶18KΩ	▲700Ω	24Ω	¶0Ω	
V 19	1B3GT	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	TOP CAP 750Ω
V 20	25Z6GT	Inf.	31Ω	17KΩ	650KΩ	600KΩ	Inf.	32Ω	32Ω	
V 21	7JP4	PIN 1	PIN 2	PIN 3	PIN 5	PIN 7	PIN 8	PIN 9	PIN 10	PIN 11	PIN 14
		1.5Ω	120KΩ	320KΩ	♦12 Meg.	♦5.5Meg.	♦5.5Meg.	♦1Meg.	♦6.8Meg.	♦6 Meg.	0Ω

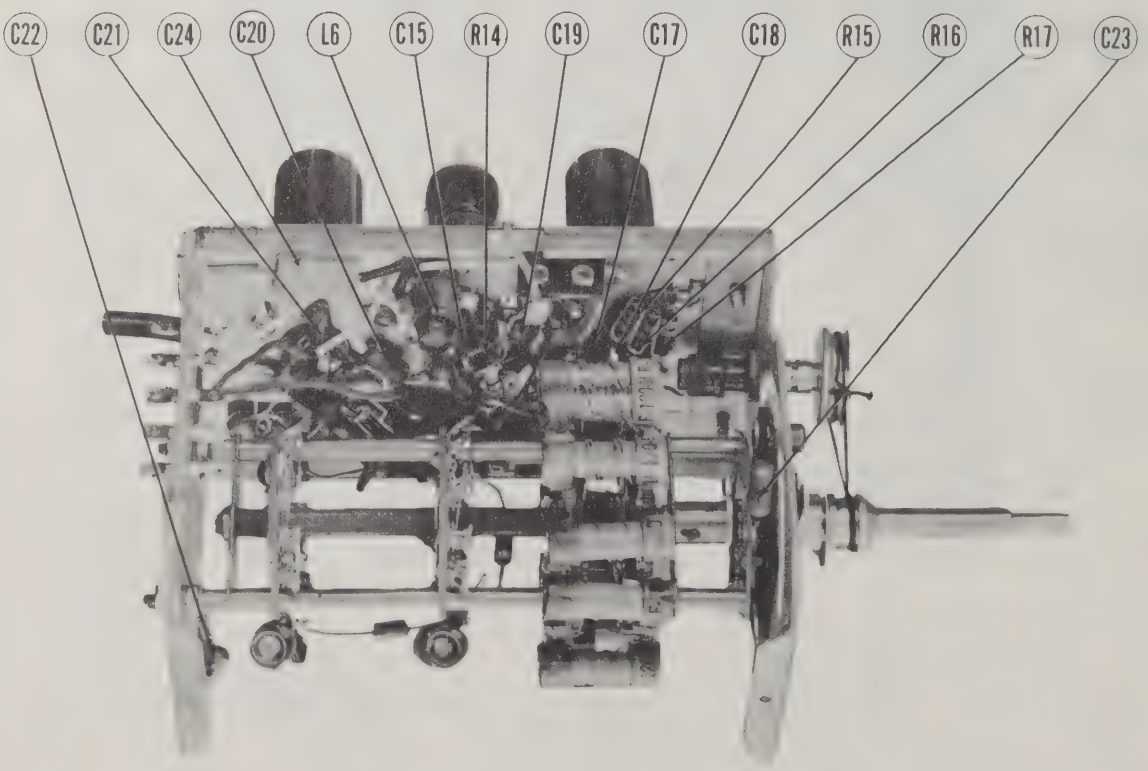
■ MEASURED FROM PIN 3 OF V15.
¶ MEASURED FROM PIN 8 OF V18.
# MEASURED FROM PIN 5 OF V20.
† MEASURED FROM OUTPUT OF M1.
♦ MEASURED FROM PIN 7 OF V19.
▲ MEASURED FROM PIN 4 OF V20.

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltage measured at 1,000 ohms.
2. Pin numbers are counted in a clockwise direction on bottom of socket.
3. Measured values are from socket pin to common negative unless otherwise stated.
4. Line voltage maintained at 117 volts for voltage readings.
5. Front panels controls set at minimum.
6. Where readings may vary according to the setting of the service controls, both minimum and maximum readings are given.

RF-IF CHASSIS-BOTTOM VIEW-CAPACITOR IDENTIFICATION

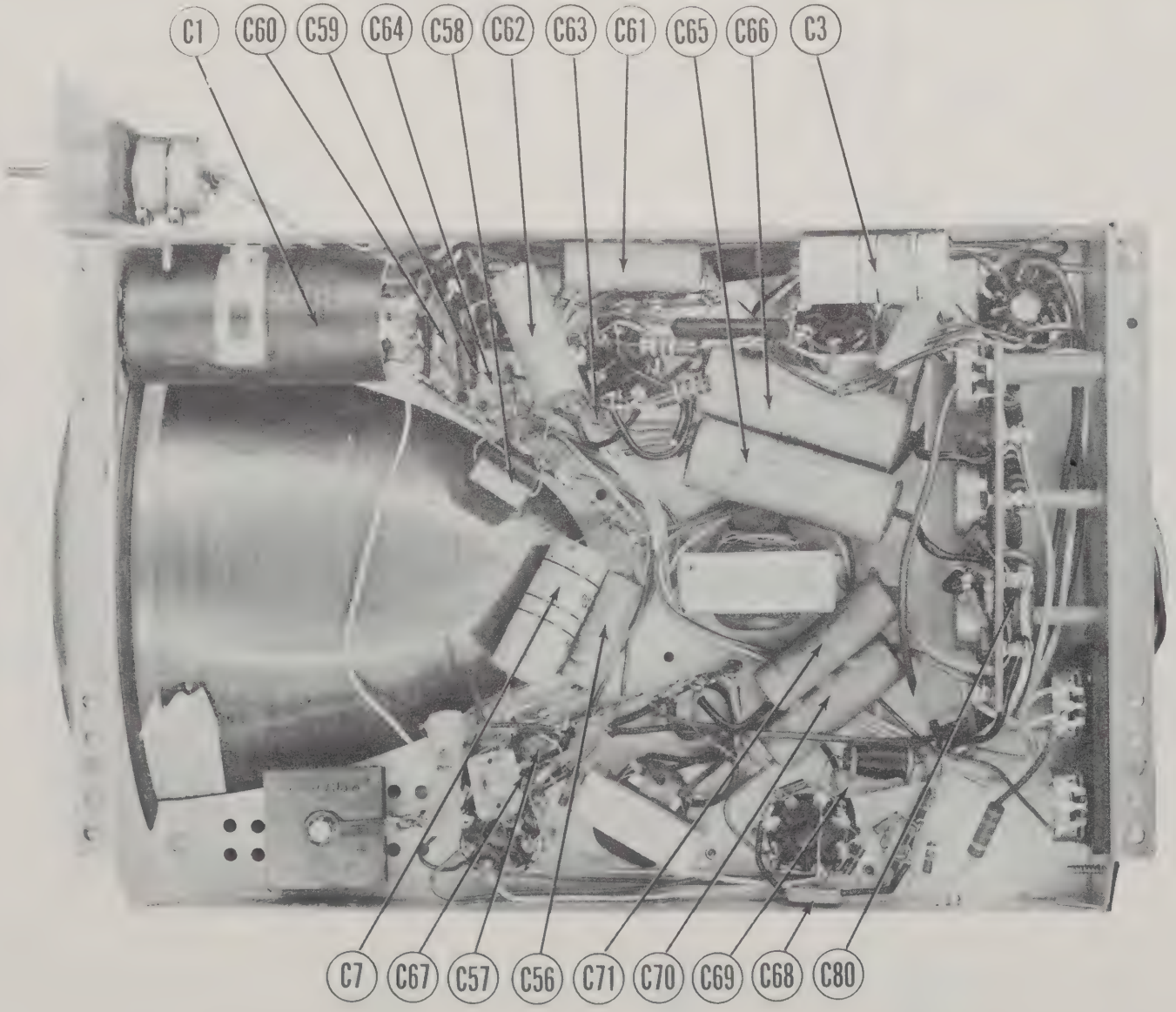


RF TUNER-RIGHT SIDE



RF TUNER-LEFT SIDE

SWEEP CHASSIS-TOP VIEW



SWEEP CHASSIS-CAPACITOR IDENTIFICATION

SWEEP CHASSIS-RESISTOR IDENTIFICATION

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No	USE	REPLACEMENT DATA: SILVERTONE PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	NOTES
V1	RF Amp	6J6	6J6	7BF	
V2	Mixer	6AG5	6AG5	7BD	
V3	Oscillator	6J6	6J6	7BF	
V4	1st Video IF	6AU6	6AU6	7BK	
V5	2nd Video IF	6AU6	6AU6	7BK	
V6	3rd Video IF	6AU6	6AU6	7BK	
V7	Video Det. -AGC Rectifier	6AL5	6AL5	6BT	
V8	Video Amp.	6AU6	6AU6	7BK	
V9	DC Restorer-Sync. Sep.	6AU6	6AU6	7BK	
V10	Sound IF	6AU6	6AU6	7BK	
V11	Ratio Det.	6AL5	6AL5	6BT	
V12	AF Amp.	6AT6	6AT6	7BT	
V13	Audio Output	25L6GT	25L6GT	7AC	
V14	Vert. Multivib.	12SN7GT	12SN7GT	8BD	
V15	Vert. Amp.	6SL7GT	6SL7GT	8BD	
V16	Hor. Multivib.	12SN7GT	12SN7GT	8BD	
V17	Hor. Amp.	12SN7GT	12SN7GT	8BD	
V18	HV Osc.	25Z6GT	25Z6GT	7AC	
V19	HV Rectifier	1B3GT	1B3GT	3C	
V20	LV Rectifier	25Z6GT	25Z6GT	7Q	
V21	Picture Tube	21EP4	21EP4	14G	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No	RATING: CAP.	RATING: VOLT	SILVERTONE PART No.	AEROVOX PART No.	CENTRALAB PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C2A	40	350	TCE-101-D	AFS8J			TVL-64	▲ Voltage Doubler Cap.
B	40	350						▲ Filter
C2A	200	150	TCE-100-D	AF402SD			TVL-202	▲ Filter †
B	125	150						▲ Filter †
C3	30	200	TCE-103-D	PRS250/40			UT-402	Filter †
C4	30	200	TCE-103-D	PRS250/40			UT-402	Filter
C5A	50	150		PRSA150/50-30			TVA-19	Filter-Red †
B	30	150						Filter-Green †
C6	4	25	TCE-104-D	PRS150/4			TVA-13	Output Cathode Bypass *
C7	4	50	TCE-104-D	PRS150/4			TVA-13	Stabilizing Cap.
C8	360		TCC-361-10	GP360M	D6-391	GP2K-390		Ant. Coupling
C9	360		TCC-361-10	GP360M	D6-391	GP2K-390		Ant. Isolation
C10	360		TCC-361-10	GP360M	D6-391	GP2K-390		RF Cathode Bypass
C11	1		TCC-010-11		D2-1			RF Coupling
C12	22		TCC-22-12	GP22M	D6-220	GP1K-22		RF Coupling
C13	360		TCC-361-10	GP360M	D6 391	GP2K-390		RF Plate Decoupling
C14	360		TCC 361-10	GP360M	D6-391	GP2K-390		RF Filament Bypass
C15	5000		TCC-502-SP	BPD-5	D6-502	811-005		Mixer Screen Bypass
C16	.		TCC 362-4		D2-2			Osc Coupling
C17	4.7		TCC 4.7-11	CN4.7DNPO	D2-4.7	NPOK-4.7		Osc. Feedback
C18	4.7		TCC-4.7-11	CN4.7DNPO	D2-4.7	NPOK-4.7		Osc. Feedback
C19	360		TCC-361-10	GP360M	D6-391	GP2K-360		RF Bypass
C20	360		TCC-361-10	GP360M	D6-391	GP2K-360		Mixer Filament Bypass *
C21	360		TCC-361-10	GP360M	D6-391	GP2K-360		Osc. Filament Bypass
C22	360		TCC-361-10	GP360M	D6-391	GP2K-360		Switch Bypass
C23	360		TCC-361-10	GP360M	D6-391	GP2K-360		Switch Bypass
C24	270	500	TCM 271-13	1468-00025	D6-271	GP2K-270	1FM-325	IF Coupling
C25	5000		TCC 502 SP	BPD 5	D6 502	811-005	29C1	AGC Filter
C26	5000		TCC-502-SP	BPD-5	D6-502	811-005	29C1	1st V. IF Decoupling
C27	270	500	TCM-271-13	1468-00025	D6-271	GP2K-270	1FM-325	IF Coupling
C28	5000		TCC-502-SP	BPD-5	D6-502	811-005	29C1	AGC Filter
C29	5000		TCC-502-SP	BPD-5	D6-502	811-005	29C1	2nd V. IF Decoupling
C30	270	500	TCM-271-13	1468-00025	D6-271	GP2K-270	1FM-325	IF Coupling
C31	5000		TCC-502-SP	BPD-5	D6-502	811-005	29C1	3rd V. IF Cathode Bypass
C32	5000		TCC-502-SP	BPD-5	D6-502	811-005	29C1	3rd V. IF Decoupling
C33	1500		TCC-152-10	GP1500M	D6-152	GP2L-0015	1FM-215	IF Coupling
C34	5000		TCC-502-SP	BPD-5	D6-502	811-005	29C1	RF Bypass
C35	5000		TCC-502-SP	BPD-5	D6-502	811-005	29C1	DAGC Decoupling
C36	5	300	TCC-050-11	1468-000009	D2-4.7	NPOK 5	MS-55	V. Diode Filter
C37	.05	400	TCP-503-4	P488-05			TM-15	Video Coupling
C38	220	500	TCM-221-7	1468-00025	D6-221	GP2K-220	1FM-325	V. Amp. Cathode Bypass
C39	.05	400	TCP-503-4	P488-05			TM-15	Video Coupling
C40	.05	400	TCP-503-4	P488-05			TM-15	Sync. Coupling
C41	.05	400	TCP-503-4	P488-05			TM-15	DC Res. Cath. Bypass
C42	.01	600	TCP-103-10	P688-01	D6-103	811-01	TM-11	Pic. Tube Grid Filter
C43	3.2		TCC 2.2-11		D2-2.2			S. IF Coupling
C44	.05	400	TCP-503-4	P488-05			TM-15	S. IF Cath. Bypass
C45	.02	600	TCP-203-10	P688-02			TM-12	S. IF Decoupling
C46	330	500	TCM-331-5	1468-00035	D6-331	GP2K-330	1FM-335	Diode Load Cap.
C47	5000		TCC-502-SP	BPD-5	D6-502	811-005	29C1	RF Bypass
C48	5000		TCC-502-SP	BPD-5	D6-502	811-005	29C1	Vol. Cont. Isolation
C49	.01	600	TCP-103-10	P688-01	D6-103	811-01	TM-11	Audio Coupling
C50	.005	600	TCP-502-10	P688-005	D6-502	811-005	TM-25	Audio Coupling
C51	.05	600	TCP-503-10	P688-05			TM 15	Output Plate Bypass
C52	5000		TCC-502-SP	BPD-5	D6-502	811-005	29C1	1st V. IF Fil. Bypass
C53	5000		TCC-502-SP	BPD-5	D6-502	811-005	29C1	2nd V. IF Fil. Bypass
C54	5000		TCC-502-SP	BPD-5	D6-502	811-005	29C1	3rd V. IF Fil. Bypass
C55	5000		TCC-502-SP	BPD-5	D6-502	811-005	29C1	V. Det.-AGC Fil. Bypass
C56	.05	600	TCP-503-10	P688-05			TM-15	Sync. Coupling
C57	100	500	TCM-101-11	1468-0001	D6 101	GP1K-100	1FM-31	Voltage Divider
C58	7000	500	TCM-472-7	1467-007	D6 682	GP2-334-0068	1FM-27	Integrator Net.
C59	7000	500	TCM-472-7	1467-007	D6-682	GP2-334-0068	1FM-27	Integrator Net.
C60	.01	600	TCP-103-10	P688-01	D6-103	811-01	TM-11	Vert. MV Feedback
C61	.1	600	TCP-104-10	P688-1			TM-1	Vert. Discharge
C62	.1	600	TCP-104-10	P688-1			TM-1	Vert. Sweep Coupling
C63	200	2000	TCM-201-32					Vert. Sweep Coupling
C64	5000	500	TCM-473-8	1467-005	D6-502	811-005	1FM-25	Voltage Divider
C65	.065	6000	TCP-502-6K	7584-005			TVM-256	Vert. Sweep Coupling
C66	.005	6000	TCP-502-6K	7584 005			TVM-256	Vert. Sweep Coupling
C67	400	500	TCM-101-11	1468-0001	D6-101	GP1K-100	1FM-31	Hor. MV Feedback
C68	220	500	TCM-221-7	1468-00025	D6-221	GP2K-220	1FM-325	Hor. Sweep Coupling

CAPACITORS (CONT.)

ITEM No.	RATING: CAP.	RATING: VOLT	SILVERTONE PART No.	AEROVOX PART No.	CENTRALAB PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C69	.01	600	TCP-103-10	P688-01	D6-103	811 01	TM 11	Voltage Divider
C70	.0005	6000	TCP-501-6K	7584 0005			TVM-356	Hor. Sweep Coupling
C71	.0005	6000	TCP-501-6K	7584-0005			TVM-356	Hor. Sweep Coupling
C72	.05	600	TCP-503-10	P688-05			TM-15	HV Osc. Decoupling
C73	750	500	TCM-751-8	1464-00075	D6 751	GP2K-750	MS-37	Fixed Trimmer
C74	360	500	TCM-361-6	1469-00035				Fixed Trimmer
C75	360		TCM-361-10	GP360M	D6-391	GP2K-390	1FM-335	HV Osc. Grid Cap.
C76	.0005	6000	TCP-501-6K				TVM-356	HV Filter
C77	.0005	6000	TVP-501-6K				TVM-356	HV Filter
C78	.1	600	TCP-104-10	P688-1			TM-1	HV Osc. Fil. Bypass
C79	.05	600	TCP-503-10	P688-05			TM-15	Line Filter
C80	.01	600	TCP-103-10	P688-01	D6-103	811-01	TM-11	Cent. Cont. Bypass

* Not used in all models.
† Some sets have C2A and C2B interchanged.
‡ Some sets have C3, C5A, and C5B combined into one unit obtainable under MFGR'S Part No. TCE-107D.

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	SILVERTONE PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	INSTALLATION NOTES
R1A	500KΩ	1	TVC-100-D	Q13-133	M-60-Z	B-60-S	Volume control
B	Switch			76-1	SW A	Not Req.	Attach to R1A per instructions
R2A	100KΩ	½		Bil-108 *			Contrast control-panel
B	25KΩ	½	TVC-101-D	Bil-120 *	TVC-101-D		Brightness control -rear
C	Shaft End			E-187 *			Attach per instructions in "Concentrikit"
R3A	1 Meg.	½		Bil-137 *			Vert hold control-panel
B	500KΩ	½	TVC-516-D	Bil-133 *	TVC-516-D		Horiz. hold control-rear
C	Shaft End			E-187 *			Attach per instructions in "Concentrikit"
R4A	10 Meg.	½	TVC-104-D	Q11-143	AM-86-S	AN-98	Height control
B	Shaft		Not Req.	RQ	KSS-3 #	AK-1	Attach to R4A per instructions
R5A	10 Meg.	½	TVC-104-D	Q11-143	AM-86-S	AN-98	Vert. linearity control
B	Shaft		Not Req.	RQ	KSS-3 #	AK-1	Attach to R5A per instructions
R6	5 Meg.	½	TVC-514-D		TVC-514-D		Horiz. centering control, tapped ⑥ 2.5 Meg.
R7	5 Meg.	½	TVC-514-D		TVC-514-D		Vert. centering control, tapped ⑥ 2.5 Meg.
R8A	2.5 Meg.	½	TVC-513-D	Q11-239	TVC-513-D	AN-83	Focus control
B	Shaft		Not Req.	TQ #		AK-19 #	Attach to R8A per instructions

* Additional parts to be used with "Concentrikit".
# File slot in shaft to duplicate original.

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	SILVERTONE PART No.	IRC PART No.	IDENTIFICATION CODES ALL RESISTORS ARE ± 20% UNLESS OTHERWISE STATED
R9	330Ω 10%	½	TRC-331-2		RF Cathode
R10	56Ω 10%	½	TRC-560-2		Parasitic Supp.
R11	1000Ω	½	TRC-102-1	BTS-1000	RF Decoupling
R12	4700Ω 10%	½	TRC-472-3		Mixer Grid Coil Shunt
R13	1 Meg.	½	TRC-105-1		Mixer Grid
R14	10000Ω 5%	½	TRC-103-1	BTS-1000	Mixer Decoupling
R15	27KΩ 10%	½	TRC-273-1		Osc. Grid
R16	27KΩ	½	TRC-274-1		Osc. Grid
R17	47Ω	½	TRC-470 1		Osc. Cathode
R18	1000Ω	½	TRC-102-1	BTS-1000	Osc. Plate
R19	11KΩ 5%	½	TRC-113-3		1st Video IF Grid
R20	68Ω 10%	½	TRC-680-2		1st Video IF Cathode
R21	150Ω	½	TRW-151-1	BW-½-150	1st Video IF Decoupling-Wire Wound
R22	150Ω	½	TRC-151-1		AGC Network
R23	10KΩ 5%	½	TRC-103-3	BTS-10K-5%	2nd Video IF Grid
R24	68Ω 10%	½	TRC 680-2		2nd Video IF Cathode
R25	150Ω	½	TRC-151-1		AGC Network
R26	11KΩ 5%	½	TRC-113-3		3rd Video IF Grid
R27	68Ω 10%	½	TRC-680-2		3rd Video IF Cathode
R28	1.8 Meg.	½	TRC-185-1	BTS-1.8 Meg.	AGC Network
R29	47KΩ	½	TRC-473-1	BTS-47K	AGC Rect. Load
R30	1500Ω 10%	½	TRC-152-2	BTS-1500	Delayed AGC Network
R31	100KΩ 10%	½	TRC-104-2	BTS-100K	Voltage Divider
R32	8200Ω 5%	½	TRC-822-3	BTS-8200-5%	Video Det. Diode Load
R33	1 Meg.	½	TRC-105-1	BTS-1 Meg.	Video Amp. Grid
R34	6800Ω 5%	1	TRC-682-3	BTS-6800-5%	Video Amp. Plate
R35	10KΩ	½	TRC-103-1	BTS-10K	Isolation
R36	100KΩ	½	TRC-104-1	BTS-100K	Voltage Divider
R37	1 Meg.	½	TRC-105-1	BTS-1 Meg.	Sync. Sep. Grid
R38	100KΩ	½	TRC-104-1	BTS-100K	Bias Network
R39	220KΩ	½	TRC-224-1	BTS-220K	Sync. Sep. Plate Load
R40	470KΩ	½	TRC-474-1	BTS-470K	DC Rest. Load
R41	470KΩ	½	TRC-474-1	BTS-470K	Picture Tube Grid
R42	68Ω 10%	½	TRC-680-2		Sound IF Cathode
R43	470Ω	½	TRC-471-1	BTS-470	Sound IF Decoupling-See Note 1
R44	220Ω 10%	½	TRC-221-2		Balancing
R45	220Ω 10%	½	TRC-221-2		Balancing
R46	15KΩ 5%	½	TRC-153-3	BTS-15K-5%	Ratio Det. Diode Load
R47	15KΩ 5%	½	TRC-153-3	BTS-15K-5%	Ratio Det. Diode Load
R48	10 Meg.	½	TRC-106-1	BTS-10 Meg.	AF Grid
R49	390KΩ	½	TRC-394-1	BTS-390K	AF Plate
R50	6.8 Meg.	½	TRC-685-1	BTS-6.8 Meg.	Bias Network-See Note 1
R51	470KΩ	½	TRC-474-1	BTS-470K	Output Grid
R52	150Ω	½	TRW-151-1	BW-½-150	Output Cathode-See Note 1-Wire Wound
R53	180KΩ	½	TRC-184-1	BTS-180K	Voltage Divider
R54	1000Ω	½	TRC-102-1	BTS-1000	Bias Network
R55	4700Ω	½	TRC-472-1	BTS-4700	Integrator Network
R56	4700Ω	½	TRC-472-1	BTS-4700	Integrator Network
R57	1000Ω	½	TRC-102-1	BTA 1000	Vert. MV Cathode
R58	100KΩ	½	TRC-104-1	BTS-100K	Vert. MV Plate
R59	390KΩ	½	TRC-394-1	BTS 390K	Vert. MV Grid
R60	2.2 Meg. 5%	½	TRC-225-1	BTS-2.2 Meg. 5%	Vert. MV Plate

RESISTORS (CONT.)

ITEM No.	RATING: RESISTANCE	RATING: WATTS	SILVERTONE PART No.	IRC PART No.	IDENTIFICATION CODES
R61	10 Meg.	½	TRC-106-1	BTS-10 Meg.	Voltage Divider
R62	2.2 Meg. 10%	½	TRC-225-4	BTA-2.2 Meg.	Voltage Divider
R63	10 Meg.	½	TRC-106-1	BTS-10 Meg.	Vert. Amp. Grid
R64	10 Meg.	½	TRC-106-1	BTS-10 Meg.	Vert. Amp. Grid
R65	6.8 Meg. 10%	1	TRC-685-5	BTA-6.8 Meg.	Vert. Amp. Plate
R66	6.8 Meg. 10%	1	TRC-685-1	BTA-6.8 Meg.	Vert. Amp. Plate
R67	5.6 Meg.	½	TRC-565-1	BTS-5.6 Meg.	Vert. Deflection Load
R68	5.6 Meg.	½	TRC-565-1	BTS-5.6 Meg.	Vert. Deflection Load
R69	2.2 Meg. 5%	½	TRC-225-1	BTS-2.2 Meg. 5%	Voltage Divider
R70	27KΩ 10%	½	TRC-273-2	BTS-27K	Horiz. MV Grid
R71	3900Ω 10%	1	TRC-392-3	BTA-3900	Horiz. MV Cathode
R72	100KΩ	½	TRC-104-1	BTS-100K	Horiz. MV Plate
R73	150KΩ	½	TRC-154-1	BTS-150K	Horiz. MV Grid
R74	6.8 Meg.	½	TRC-685-1	BTS-6.8 Meg.	Horiz. MV Plate
R75	4.7 Meg.	½	TRC-475-1	BTS-4.7 Meg.	Voltage Divider
R76	4.7 Meg.	½	TRC-475-1	BTS-4.7 Meg.	Voltage Divider
R77	3.3 Meg.	½	TRC-335-1	BTS-3.3 Meg.	Voltage Divider
R78	1 Meg.	½	TRC-105-1	BTS-1 Meg.	Horiz. Amp. Grid
R79	1 Meg.	½	TRC-105-1	BTS-1 Meg.	Horiz. Amp. Grid
R80	1200Ω	½	TRC-122-1	BTS-1200	Horiz. Amp. Plate
R81	4.7 Meg.	½	TRC-475-1	BTS-4.7 Meg.	Horiz. Deflection Load
R82	4.7 Meg.	½	TRC-475-1	BTS-4.7 Meg.	Horiz. Deflection Load
R83	18KΩ 10%	1	TRC 183-5	BTA-18K	HV Osc. Grid
R84	68Ω	½	TRC-680-1		Parasitic Supp.
R85	68Ω	½	TRC-680-1		Parasitic Supp. -See Note 1
R86	100KΩ 5%	1	TRC-104-4		HV Filter
R87	86Ω 10%	2	TRW-860-8		Filament Shunt-Wire Wound
R88	18Ω 10%	5	TRW-180-11		Filament Dropping-Wire Wound
R89	1200Ω 10%	1	TRW-122-4	BW-1-1200	Bias Network-Wire Wound
R90	680Ω 10%	2	TRW-681-8	BW-2-680	Filter-Wire Wound
R91	18Ω 10%	5	TRW-180-11		Surge Limiter-Wire Wound
R92	1 Meg.	½	TRC-105-1	BTS-1 Meg.	Voltage Divider
R93	3.3 Meg.	½	TRC-335-1	BTS-3.3 Meg.	Voltage Divider
R94	2.2 Meg. 10%	1	TRC-225-4		Voltage Divider
R95	2.2 Meg. 10%	1	TRC-225-4		Voltage Divider
R96	2.2 Meg. 10%	1	TRC-225-4		Voltage Divider
R97	2.2 Meg. 10%	1	TRC-225-4		Voltage Divider
R98	1 Meg.	½	TRC-105-1	BTS-1 Meg.	Voltage Divider

Note 1. Not used in all models.

TRANSFORMER (SWEEP CIRCUITS)

ITEM No.	RATING: DC RESISTANCE PRI.	RATING: DC RESISTANCE SEC.	SILVERTONE PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	NOTES
T1	1080Ω CT and 375Ω CT		TTR-160-1D				Hor. Output Choke

TRANSFORMER (H.V. OSC.)

ITEM No.	RATING: PRI.	RATING: SEC. 1	RATING: SEC. 2	RATING: SEC. 3	SILVERTONE PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.
T2	1.1Ω	750Ω	25Ω	0Ω	TLF-137-D			

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	SILVERTONE PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	INSTALLATION NOTES
T3	3.1KΩ	3.5Ω	210Ω	.5Ω	Part of TSP-41-8	A-3332	A-3025		

SPEAKER

ITEM No.	RATINGS	SILVERTONE PART No.	JENSEN PART No.	QUAM PART No.	NOTES
SP1	FIELD. RES. PM / V. C. IMP. 3.5Ω	TSP-41-8	8T-113 ① MOD. P4-X	4A1 ①	① Remount output transformer.
SP2	CONE DIA. 3 7/8" / V. C. DIA. 9/16"				

FILTER CHOKE

ITEM No.	RATINGS: TOTAL DIRECT CURRENT	RATINGS: D. C. RESISTANCE	RATINGS: INDUCTANCE (0 CURRENT 1000 ~)	SILVERTONE PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	INSTALLATION NOTES
L1	.139A	76Ω	1.5 Henries	TTR-178-1D		C-2994		

SILVERTONE MODELS 9115 (Ch. 478.224), 9116 (Ch. 478.221)

PARTS LIST AND DESCRIPTIONS (Continued)

COILS (RF-IF)

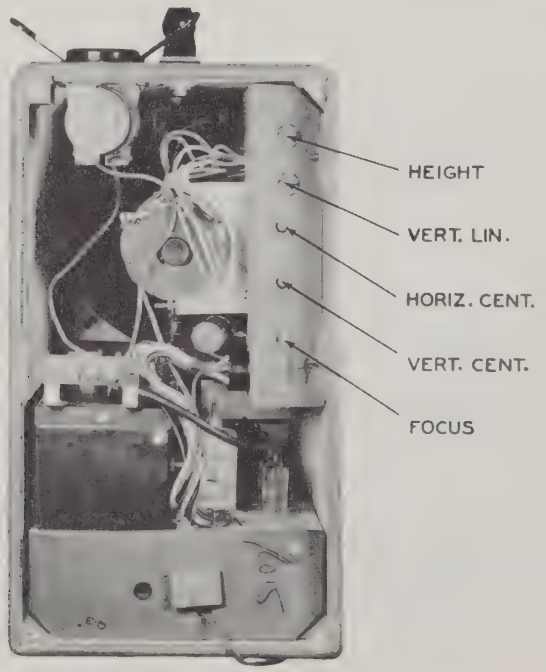
ITEM No.	USE	DC RES.		REPLACEMENT DATA		NOTES
		PRI.	SEC.	SILVERTONE PART No.	MEISSNER PART No.	
L2	RF Choke	3.5Ω		TLF-140-D		
L3	RF End Inductance	0Ω		TLF-143-D		
L4	RF End Inductance	0Ω		TLF-143-D		
L5A	Osc. Coil	0Ω		TLF-120-1D		Channel #2
B	Osc. Coil	0Ω		TLF-120-2D		Channel #3
C	Osc. Coil	0Ω		TLF-120-3D		Channel #4
D	Osc. Coil	0Ω		TLF-120-4D		Channel #5
E	Osc. Coil	0Ω		TLF-120-5D		Channel #6
F	Osc. Coil	0Ω		TLF-120-6D		Channel #7
G	Osc. Coil	0Ω		TLF-120-7D		Channel #8
H	Osc. Coil	0Ω		TLF-120-8D		Channel #9
I	Osc. Coil	0Ω		TLF-120-9D		Channel #10
J	Osc. Coil	0Ω		TLF-120-10D		Channel #11
K	Osc. Coil	0Ω		TLF-120-10D		Channel #12
L	Osc. Coil	0Ω		TLF-120-10D		Channel #13
L6	1st Video IF	.2Ω		TLF-147-D		
L7	2nd Video IF	.2Ω		TLF-147-D		
L8	Fil. Choke	.1Ω		TLF-144-D		
L9	3rd Video IF	.2Ω		TLF-148-D		
L10	Fil. Choke	.1Ω		TLF-144-D		
L11	4th Video IF	.2Ω		TLF-151-D		
L12	Peaking	10Ω		TLF-133-D		Wound on 33KΩ resistor.
L13	Peaking	17Ω		TLF-134-D		
L14	Peaking	6.5Ω		TLF-135-D		Wound on 22KΩ resistor.
L15	Peaking	14Ω		TLF-136-D		Wound on 15KΩ resistor.
L16	Sound IF	1.5Ω		TLF-114-D		
L17	Ratio Det. Trans.	7Ω	.1Ω	TLF-142-D		
L18	Cath. Choke	38Ω		TLF-528-D		

SELENIUM RECTIFIER

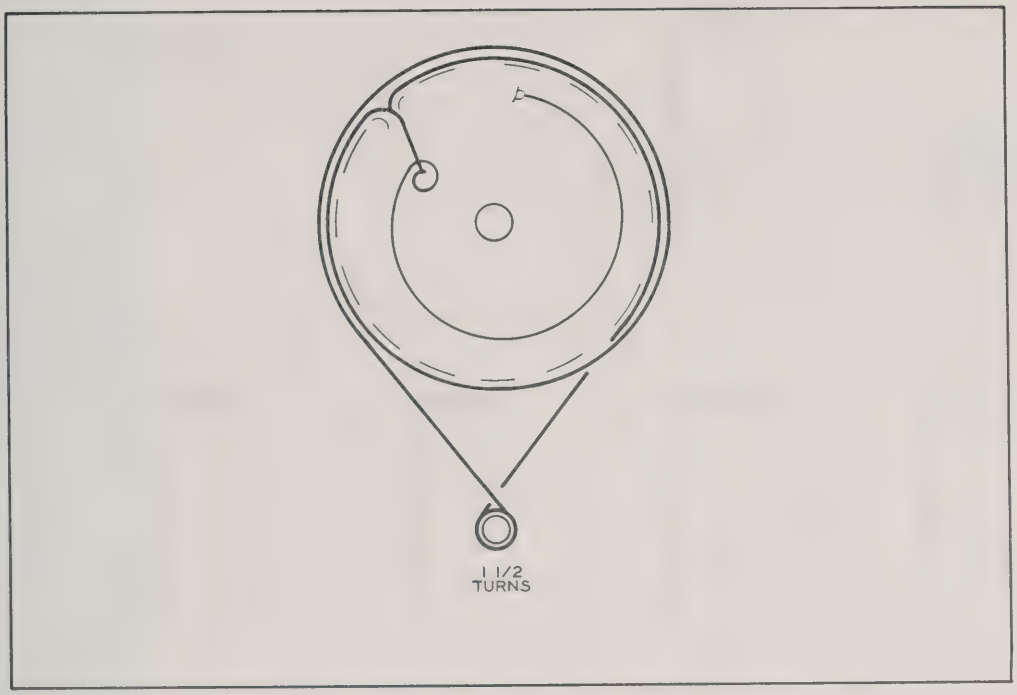
ITEM No.	RATING	REPLACEMENT DATA			NOTES
	CURRENT	SILVERTONE PART No.	SYLVANIA PART No.		
M1	.175A		NE-5		

MISCELLANEOUS

ITEM No.	PART NAME	SILVERTONE PART No.	NOTES
M2	RF Tuner Assembly		
M3	Trimmer	TAS-503-D	Fine tuning (2.5-4MMF) includes bushing.
M4	Switch	TSW-202	Interlock
	Trimmer	TCM-122-VAR	HV Padder (350-1200MMF)
	Cabinet	TCB-256-1D	Includes back
	Safety Glass	TGL-104-D	
	Knob	TKN-100	Outside (4 required)
	Knob	TKN-101	Inside (Small shaft) (2 required)
	Knob	TKN-103	Inside (Large shaft (1 required)
	Knob	TKN-108	Inside (Engraved) (1 required)
	Knob	TKN-111-D	Antenna Assembly
	Handle	THA-100	
	Antenna Assembly	TAS-527	Complete, Roto "V"



CABINET-REAR VIEW



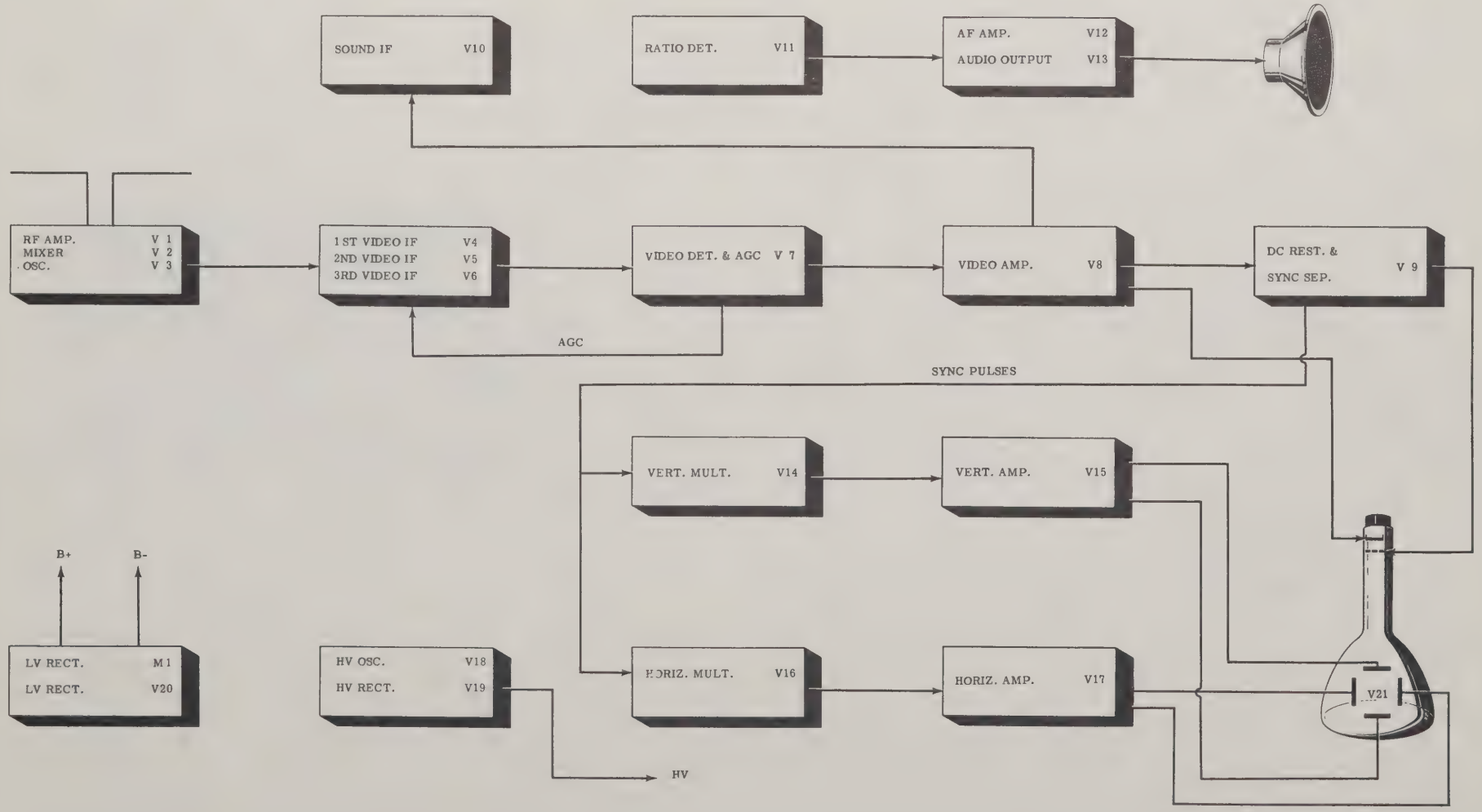
FINE TUNING DRIVE CORD STRINGING

DISASSEMBLY INSTRUCTIONS

1. Remove four push-on type control knobs.
2. Remove four screws holding rear cover. Remove cover.
3. Remove power plug from sweep chassis.
4. Remove HV cap.
5. Remove four phillips head screws holding antenna mounting. Push antenna to inside of cabinet.
6. Remove four 5/16" hex head bolts holding RF-IF chassis. Remove chassis.
7. Remove four phillips head screws holding top chassis. Remove chassis.

PICTURE SIZE ADJUSTMENT

The picture size trimmer (B1) which controls the high voltage is located in the high voltage power supply compartment and is used to adjust the picture to the proper horizontal width. Due to the interaction between the circuits, it will be necessary to adjust the height control when B1 is changed.



BLOCK DIAGRAM

PHOTOFACT* Folder

STROMBERG-CARLSON

TC-19

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STROMBERG-CARLSON
TC-19

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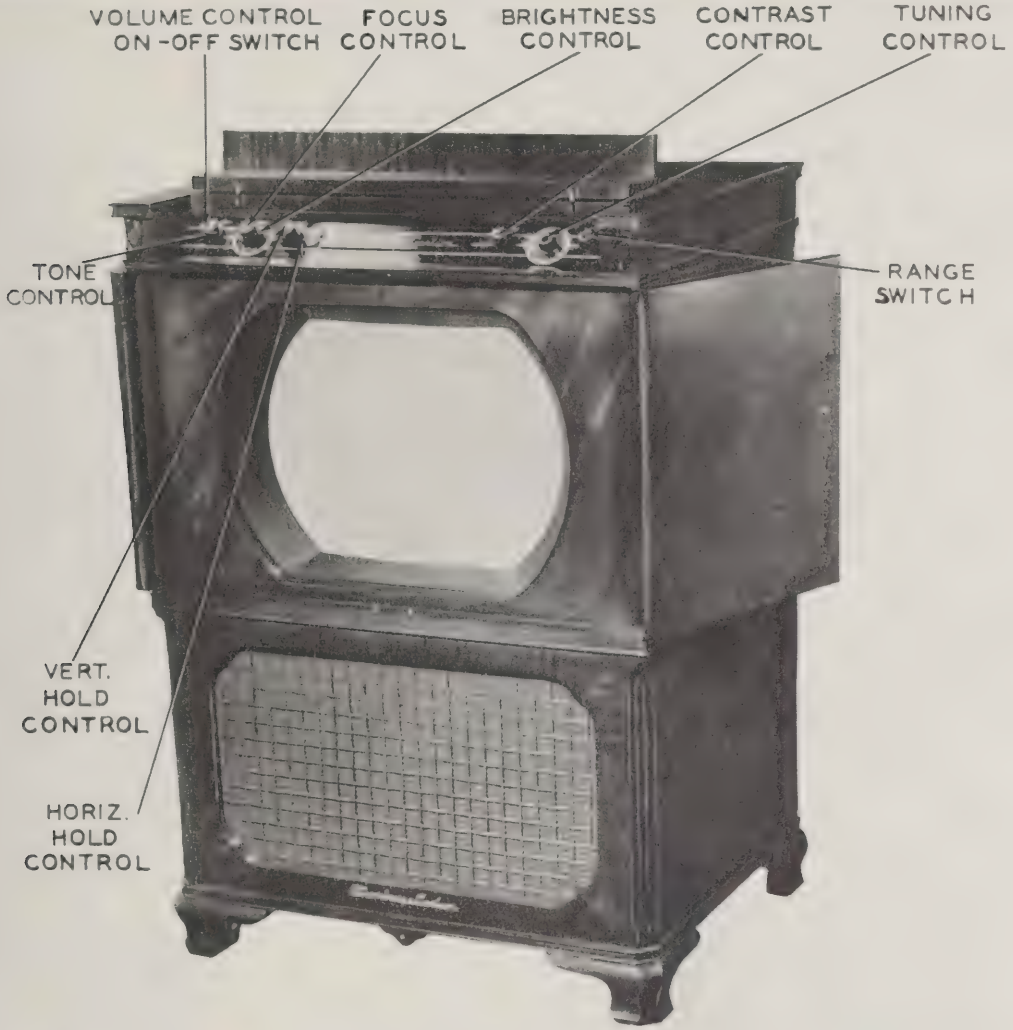
STROMBERG CARLSON MODEL TC-19



STROMBERG CARLSON MODEL TC-19

TRADE NAME	Stromberg-Carlson, Model TC-19
MANUFACTURER	Stromberg-Carlson Co., 100 Carlson Rd., Rochester 3, New York
TYPE SET	Television Receiver
TUBES	Twenty Nine
POWER SUPPLY	110-120 Volts AC-60 Cycle RATING 2.9 Amp. at 117 Volts AC
TUNING RANGE—	54MC to 88MC, 174MC to 216MC Continuous Tuning

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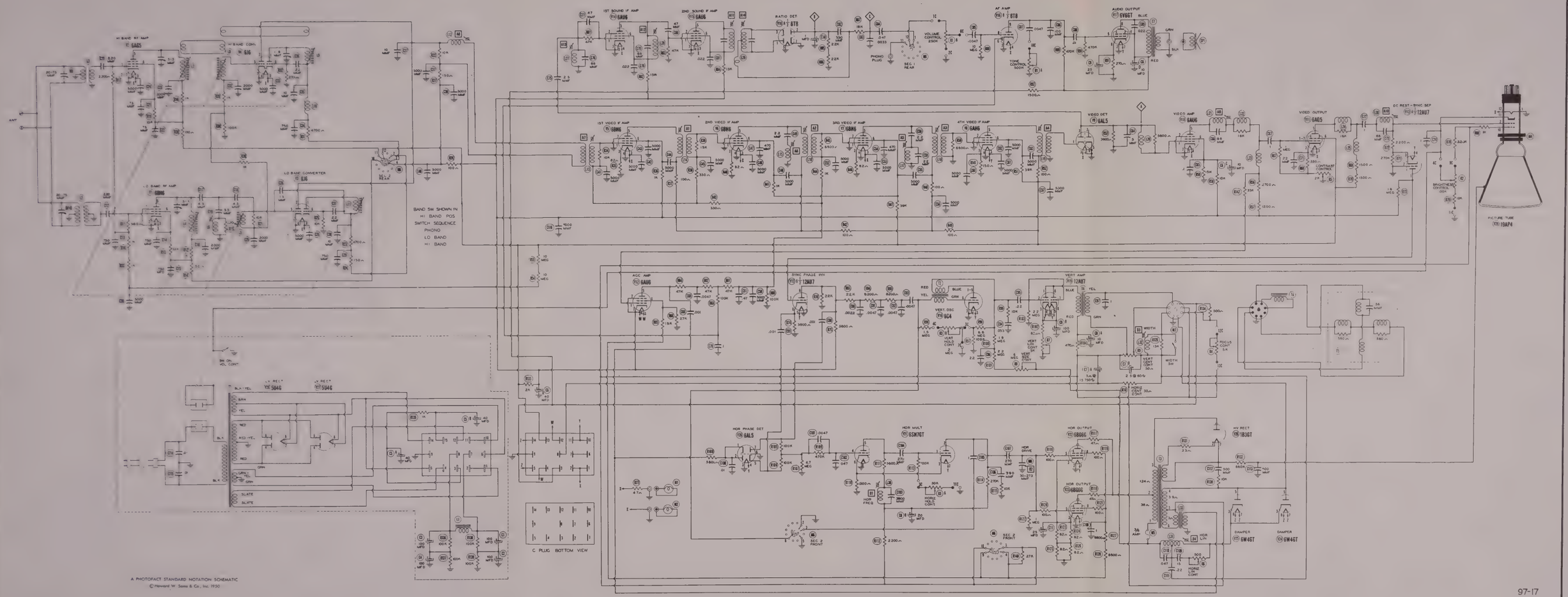

A PHOTOFACT STANDARD NOTATION SCHEMATIC
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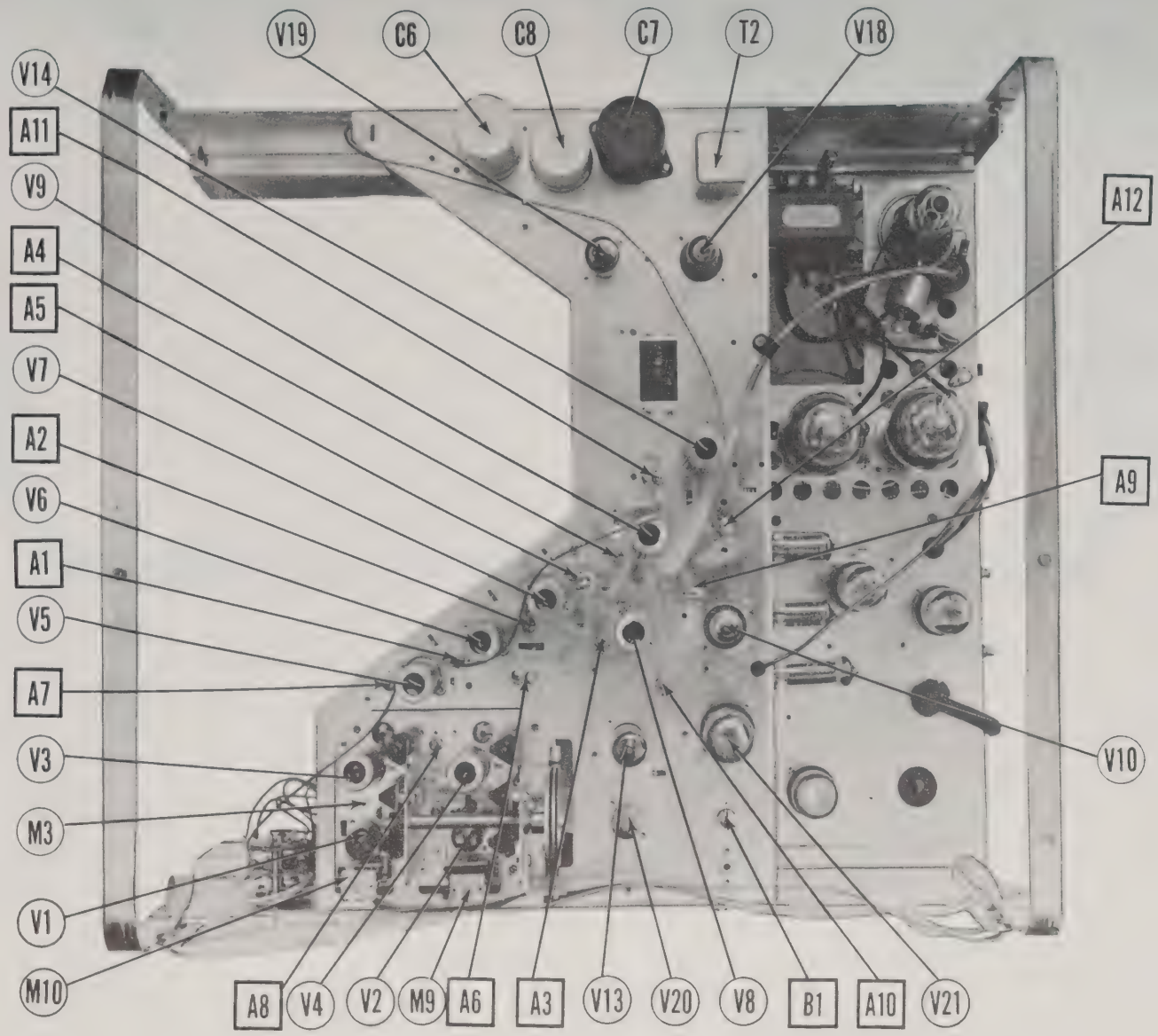
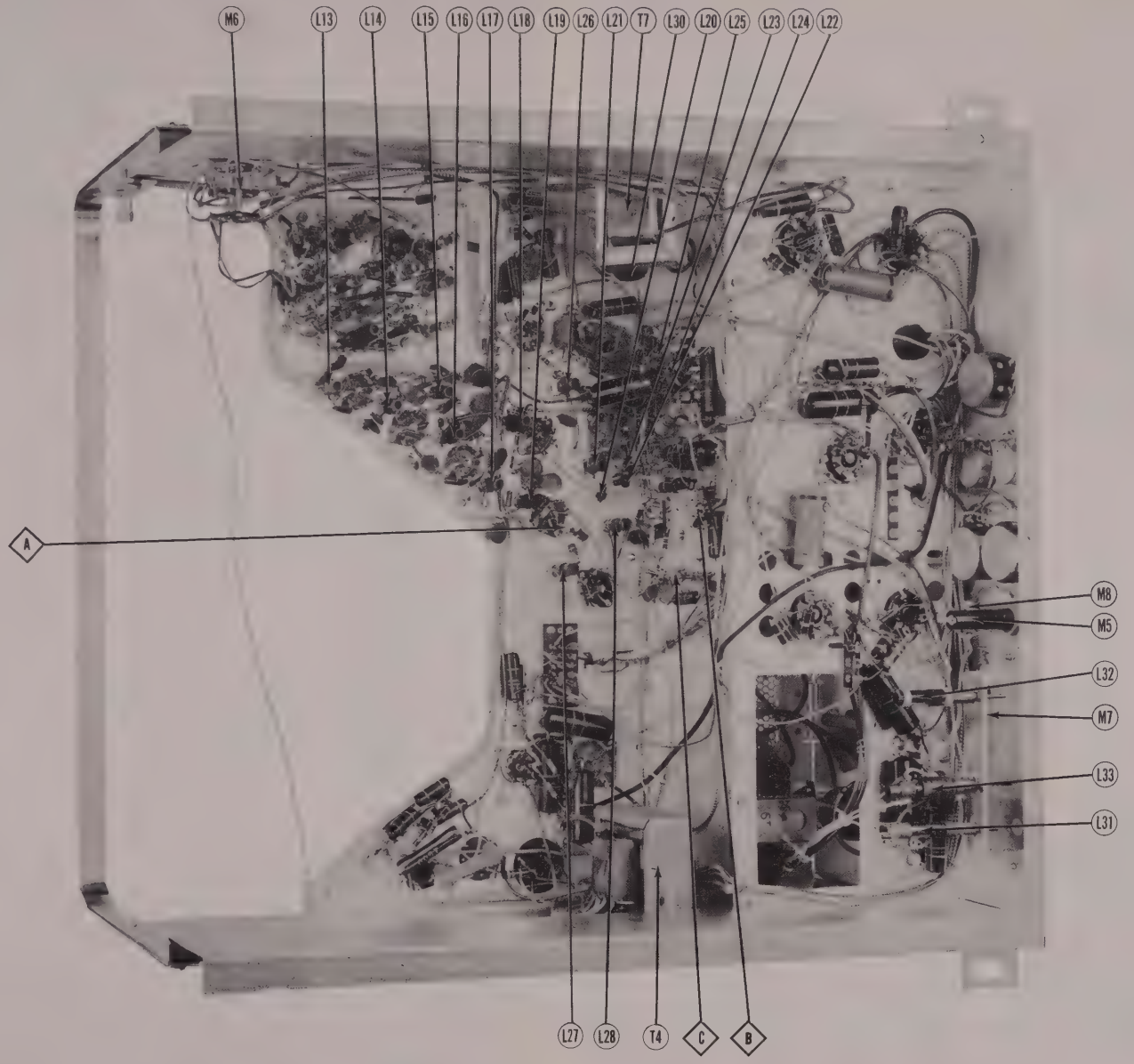
STROMBERG CARLSON
MODEL TC-19

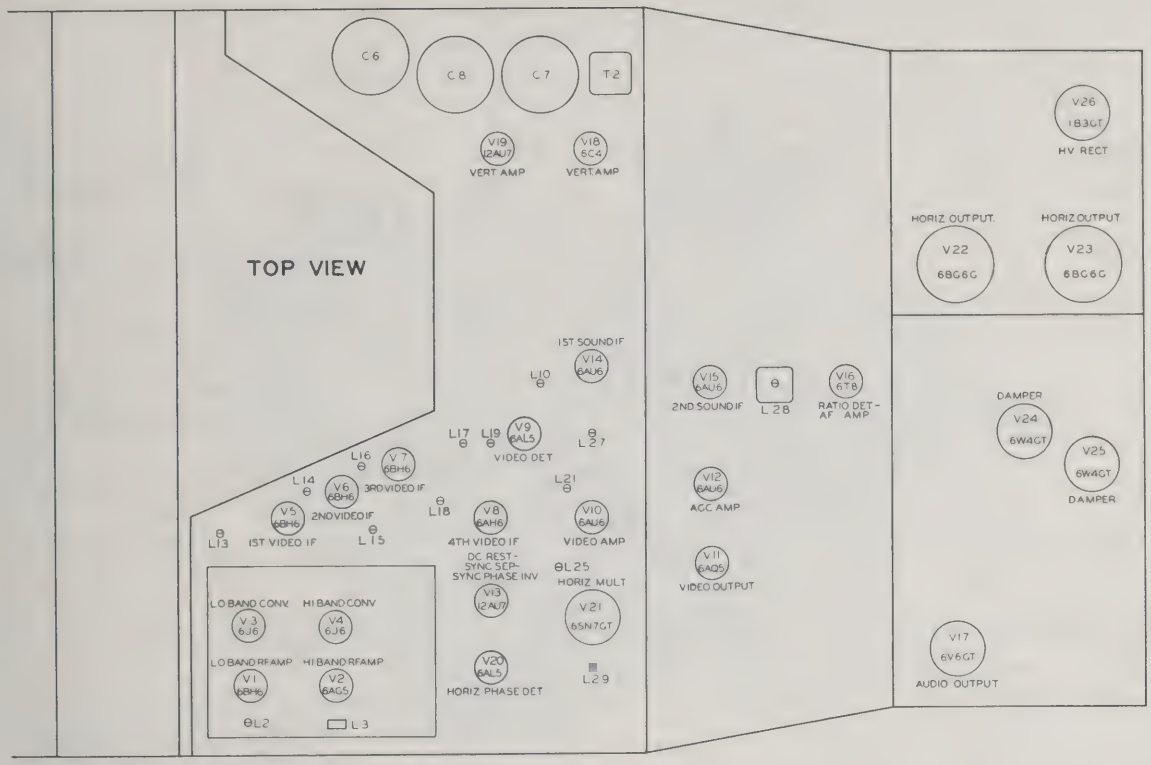
97-17

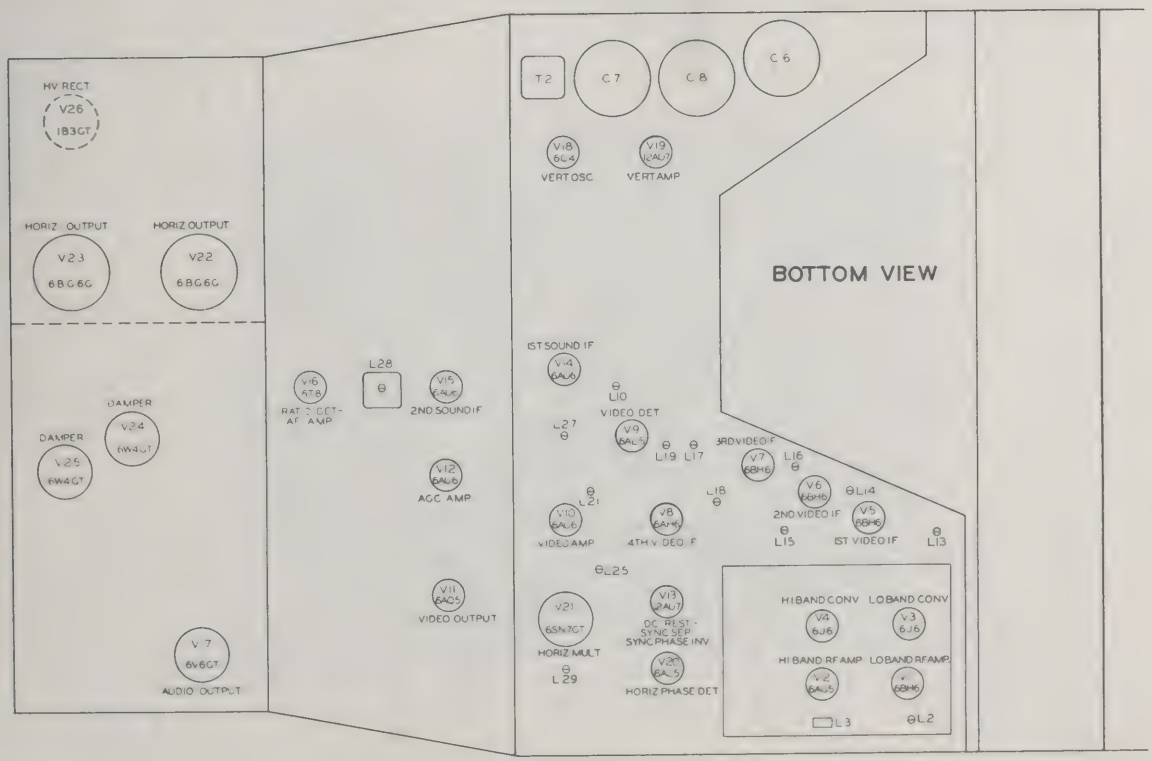


CHASSIS TOP VIEW



CHASSIS BOTTOM VIEW-TRANS., INDUCTOR AND ALIGNMENT IDENTIFICATION





TUBE PLACEMENT CHART

STROMBERG CARLSON
MODEL TC-19

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

The high voltage shock hazard may be eliminated by removing the horizontal oscillator tube (V21) from its socket.
Do not attempt to operate this set without the deflection yoke, focus coil, and panel control plugs connected.

VIDEO IF ALIGNMENT

Connect the negative lead of a 3 volt battery to the junction of R43 and R44, connect the positive lead to chassis.
Turn the tuner switch to "LOW BAND" (center position.)
Turn the tuning shaft until a point is found where a small amount of rotation causes no change in the response curve.
The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.
Attenuate the signal generator to maintain a 2 volt peak to peak pattern on the scope.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
1.	.001MFD	High side to pin 1 (Grid) of 6BH6 (V5). Low side to chassis.	24MC (10MC SWP)	21.9MC 22.7MC 26.4MC	See instruct-ions above	Vert. Amp. thru 47KΩ to Point (A). Low side to chassis.	A1, A2, A3, A4	Adjust for response curve similar to figure 1.
2.	.001MFD	"	"	21.9MC (max. output)	"	"	A5	Adjust for minimum response at the 21.9MC point on response curve as shown in figure 1.
3.	.001MFD	"	"	21.0MC (max. output)	"	"	A6	Adjust for minimum response at 21MC point on curve as shown in figure 1.
4.	Direct	High side to ungrounded tube shield floating over "LOW BAND" converter tube (V3). Low side to chassis.	"	22.7MC 26.4MC	"	"	A7, A8	Adjust for response curve similar to figure 2 with markers as shown. If necessary SLIGHTLY retouch A1 thru A4 for proper response.

4.5MC TRAP ADJUSTMENT

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
5.	.001MFD	High side to pin 1 (Grid) of 6AU6 (V10). Low side to chassis.	Not used	4.5MC (400 ∿ Mod.)	Any	Vert. Amp. thru probe detector (figure 3) to pin 2 of picture tube.	A9, A10	Adjust for minimum 400 ∿ response on scope.

SOUND IF ALIGNMENT

Use frequency modulated signal with 60 ∿ modulation and 450KC sweep. Use 120 ∿ sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
6.	.001MFD	High side to pin 1 (Grid) of 6AU6 (V10). Low side to chassis.	4.5MC (450KC Sweep)	4.5MC	Any	Vert. Amp. to Point (B). Low side to chassis.	A11, A12, A13	Disconnect stabilizer capacitor C10. Adjust for maximum amplitude and symmetry as per figure 4. Attenuate sweep generator to maintain signal below limiting level.
7.	.001MFD	"	"	"	"	Vert. Amp. to Point (C). Low side to chassis.	A14	Reconnect capacitor C10. Adjust A14 so 4.5MC occurs at center of crossover lines as per figure 5. SLIGHTLY retouch A11 for maximum amplitude and straightness of crossover lines.

THE TUNER SECTION OF THIS RECEIVER HAS BEEN PROPERLY ALIGNED AT THE FACTORY AND IS VERY STABLE; IT SHOULD NOT REQUIRE ADJUSTMENT IN THE FIELD.

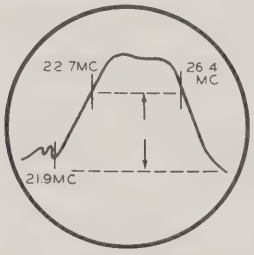


FIG.1

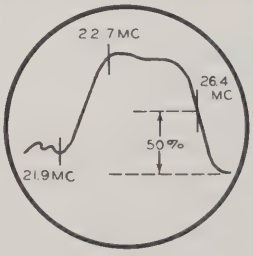


FIG.2

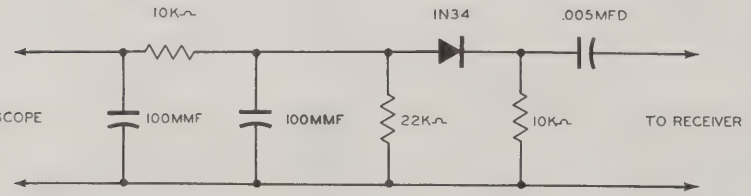


FIG.3

FIG. 4

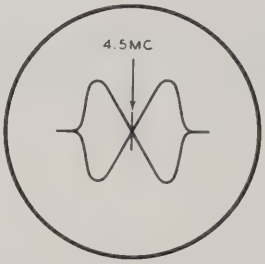
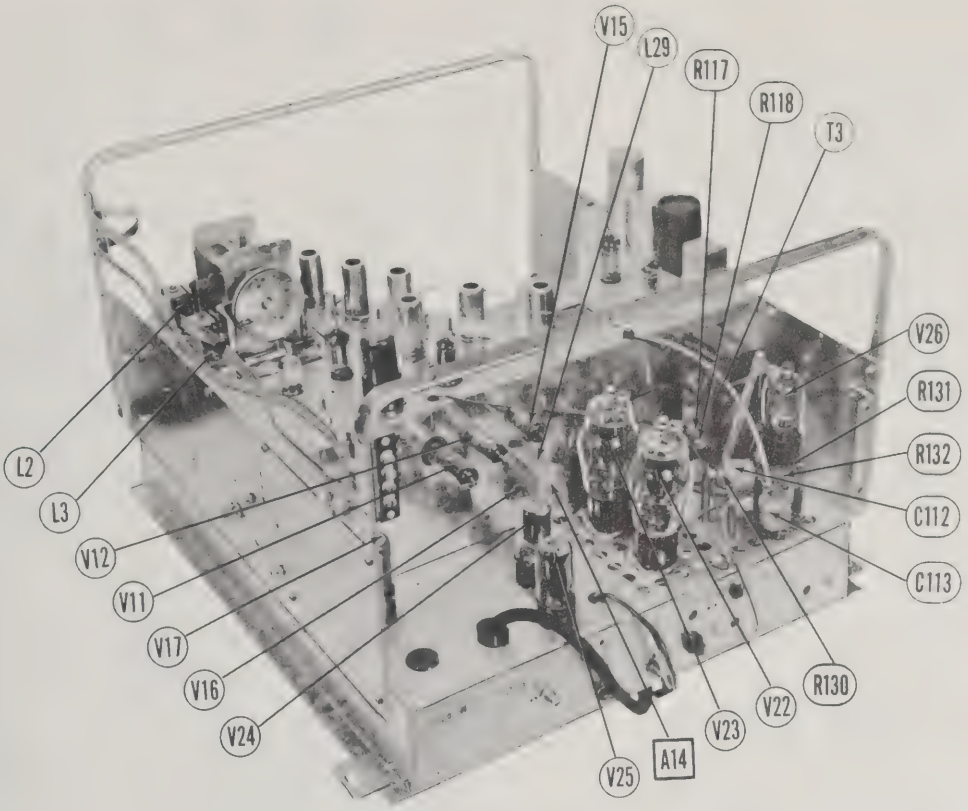
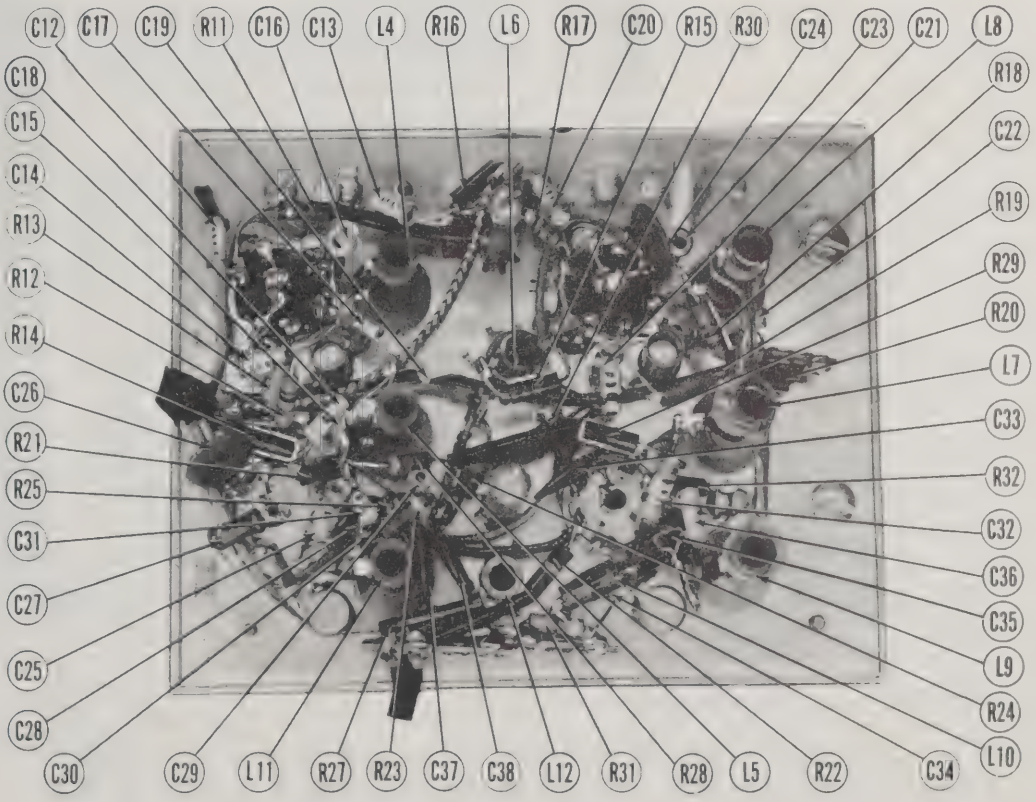


FIG. 5



CHASSIS-TOP VIEW



RF TUNER-BOTTOM VIEW

VOLTAGE AND RESISTANCE MEASUREMENTS

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
▲ V 1	6BH6	-1VDC	0V.	6.3VAC	0V.	200VDC	165VDC	0V.		
■ V 2	6AG5	-1VDC	0V.	6.3VAC	0V.	200VDC	165VDC	0V.		
▲ V 3	6J6	60VDC	130VDC	6.3VAC	0V.	-3.5VDC	§-8.6VDC	0V.		
■ V 4	6J6	60VDC	130VDC	6.3VAC	0V.	-2VDC	§-9VDC	0V.		
V 5	6BH6	-2.5VDC	.3VDC	6.3VAC	0V.	210VDC	135VDC	0V.		
V 6	6BH6	-.5VDC	.3VDC	6.3VAC	0V.	215VDC	135VDC	0V.		
V 7	6BH6	-.5VDC	.3VDC	6.3VAC	0V.	210VDC	135VDC	0V.		
V 8	6AH6	0V.	0V.	6.3VAC	0V.	215VDC	135VDC	1.9VDC		
V 9	6AL5	0V.	-1VDC	6.3VAC	0V.	0V.	0V.	-.4VDC		
V 10	6AU6	-.4VDC	0V.	0V.	6.3VAC	125VDC	75VDC	0V.		
V 11	6AQ5	15VDC	65VDC	6.3VAC	0V.	145VDC	215VDC	15VDC		
V 12	6AU6	115VDC	130VDC	¶6.3VAC	¶6.3VAC	-.5VDC	300VDC	130VDC		
V 13	12AU7	16VDC	0V.	15VDC	6.3VAC	6.3VAC	80VDC	16VDC	19VDC	0V.
V 14	6AU6	-.4VDC	0V.	0V.	6.3VAC	55VDC	55VDC	0V.		
V 15	6AU6	-.4VDC	0V.	6.3VAC	0V.	55VDC	55VDC	0V.		
V 16	6T8	-.4VDC	-4.8VDC	-.4VDC	6.3VAC	0V.	-.9VDC	0V.	-.5VDC	70VDC
V 17	6V6GT	0V.	0V.	225VDC	250VDC	0V.	70VDC	6.3VAC	12VDC	
V 18	6C4	95VDC 45VDC	0V.	6.3VAC	0V.	95VDC 45VDC	-2.6VDC	0V.		
V 19	12AU7	400VDC	0V.	16VDC 28VDC	6.3VAC	6.3VAC	400VDC	0V.	16VDC 28VDC	0V.
V 20	6AL5	.1VDC	.1VDC	0V.	6.3VAC	16VDC	0V.	-2.4VDC		
V 21	6SN7GT	-4.7VDC	195VDC	17VDC	1.9VDC	320VDC	17VDC	6.3VAC	0V.	
V 22	6BG6G	7.3VDC	0V.	14VDC	300VDC	-.8VDC	195VDC	6.3VAC	280VDC	TOP CAP *
V 23	6BG6G	350VDC	0V.	14VDC	0V.	-.8VDC	0V.	6.3VAC	280VDC	TOP CAP *
V 24	6W4GT	0V.	0V.	490VDC	400VDC	420VDC	0V.	¶6.3VAC	¶6.3VAC	
V 25	6W4GT	0V.	0V.	490VDC	0V.	420VDC	0V.	¶6.3VAC	¶6.3VAC	
V 26	1B3GT	* DO NOT MEASURE.								
V 27	5U4G	0V.	450VDC	0V.	400VAC	0V.	400VAC	0V.	450VDC	
V 28	5U4G	0V.	450VDC	0V.	400VAC	0V.	400VAC	0V.	450VDC	
V 29	19AP4	0V.	3.5VDC	PIN 10 400VDC	PIN 11 150VDC	PIN 12 6.3VAC				

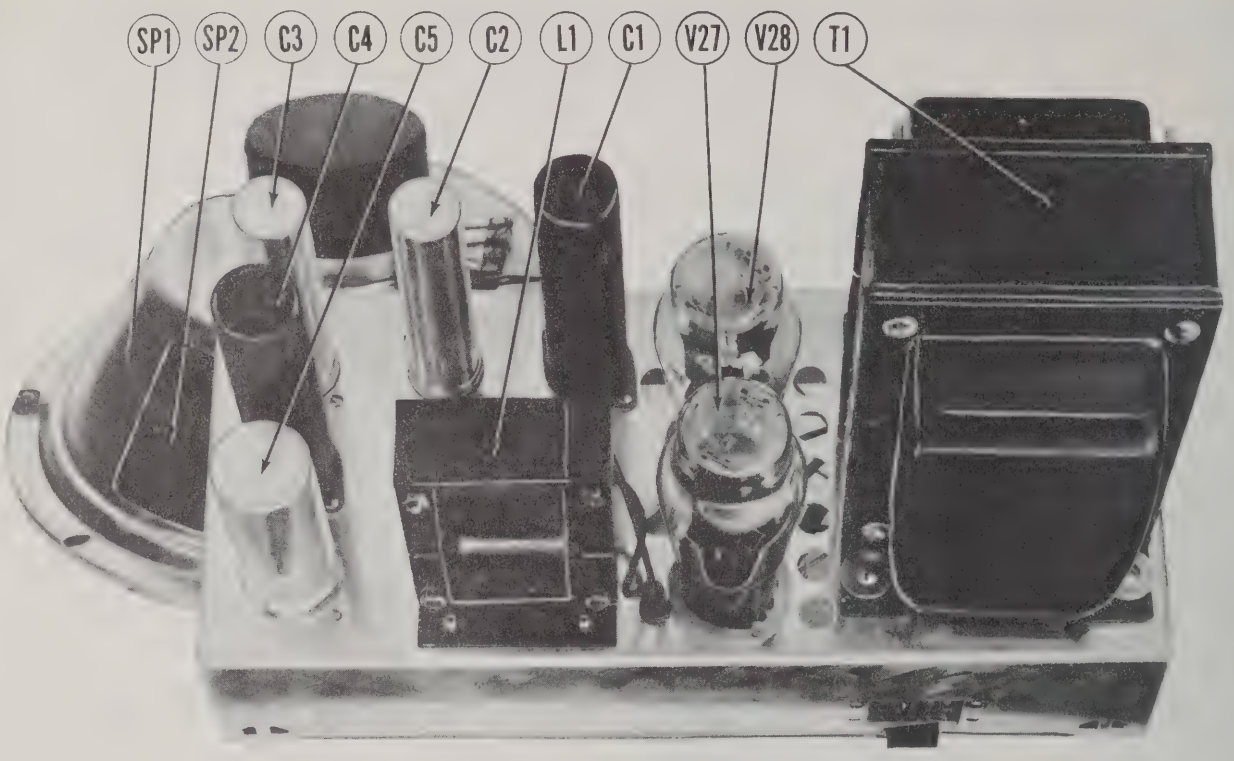
▲ MEASURED WITH RANGE SWITCH IN LO-BAND POSITION.
■ MEASURED WITH RANGE SWITCH IN HI-BAND POSITION.
§ TAKEN WITH VACUUM TUBE VOLTMETER.
* DO NOT MEASURE.
¶ MEASURED ACROSS FILAMENTS.

RESISTANCE READINGS

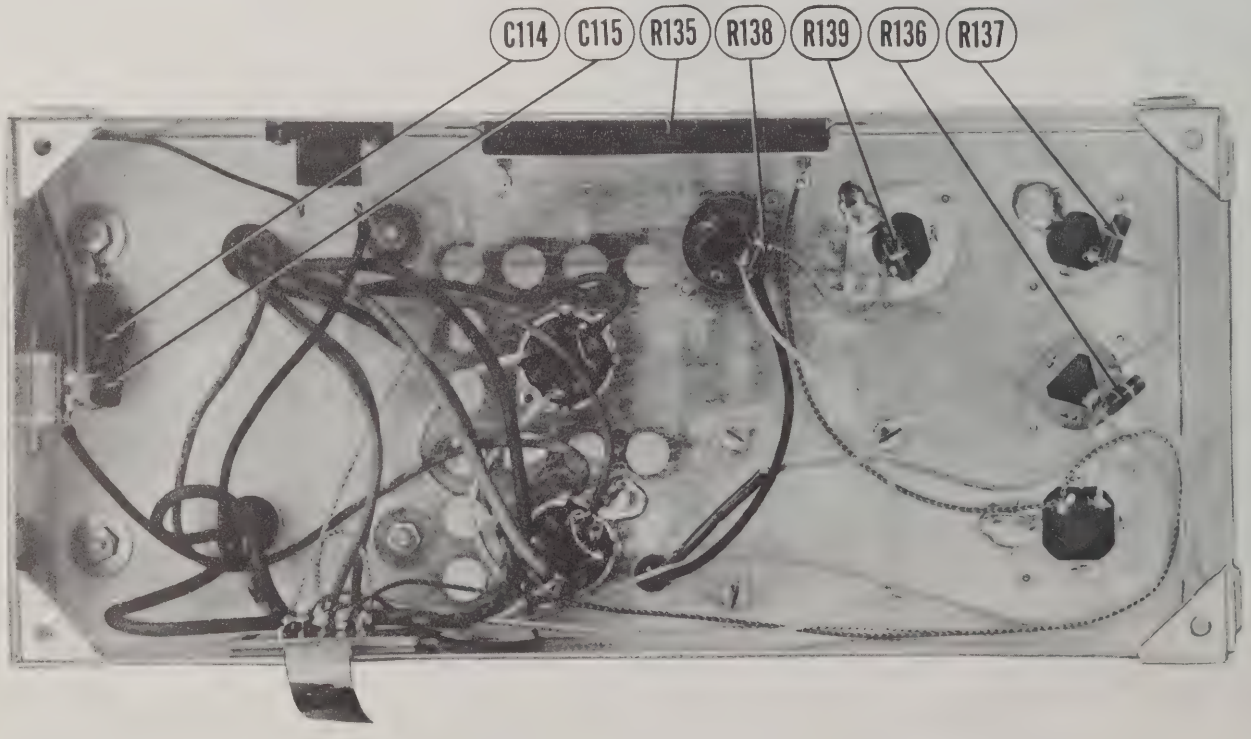
Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
▲ V 1	6BH6	220KΩ	0Ω	.1Ω	0Ω	†2.7KΩ	†36KΩ	0Ω		
■ V 2	6AG5	220KΩ	0Ω	.1Ω	0Ω	†2.7KΩ	†36KΩ	0Ω		
▲ V 3	6J6	†9KΩ	†3KΩ	.1Ω	0Ω	100KΩ	10KΩ	0Ω		
■ V 4	6J6	†9KΩ	†3KΩ	.1Ω	0Ω	100KΩ	2.7KΩ	0Ω		
V 5	6BH6	100KΩ	82Ω	.1Ω	0Ω	†1.8KΩ	†4KΩ	0Ω		
V 6	6BH6	100KΩ	82Ω	.1Ω	0Ω	†1.6KΩ	†42KΩ	0Ω		
V 7	6BH6	100KΩ	82Ω	.1Ω	0Ω	†1.8KΩ	†42KΩ	0Ω		
V 8	6AH6	1Ω	0Ω	.1Ω	0Ω	†1.6KΩ	†42KΩ	150Ω		
V 9	6AL5	1Ω	100KΩ	.1Ω	0Ω	0Ω	0Ω	3.9KΩ		
V 10	6AU6	3.9KΩ	0Ω	0Ω	.1Ω	†5KΩ	†8KΩ	0Ω		
V 11	6AQ5	1 Meg.	2.5KΩ	.1Ω	0Ω	†4KΩ	†1.5KΩ	1 Meg.		
V 12	6AU6	48KΩ	†3KΩ	†3KΩ	†3KΩ	250KΩ	†10KΩ	†3KΩ		
V 13	12AU7	†1.8 Meg.	0Ω	270KΩ	.1Ω	.1Ω	†5.8KΩ	†1.8 Meg.	3.9KΩ	0Ω
V 14	6AU6	47KΩ	0Ω	0Ω	.1Ω	†18KΩ	†18KΩ	0Ω		
V 15	6AU6	47KΩ	0Ω	.1Ω	0Ω	†20KΩ	†20K Ω	0Ω		
V 16	6T8	Inf.	44KΩ	Inf.	.1Ω	0Ω	220KΩ	0Ω	10 Meg.	†470KΩ
V 17	6V6GT	0Ω	0Ω	†2.4KΩ	†2.2KΩ	470KΩ	†470KΩ	.1Ω	270Ω	
V 18	6C4	#3 Meg. #9 Meg.	Inf.	.1Ω	0Ω	#3 Meg. #9 Meg.	1.5 Meg.	0Ω		
V 19	12AU7	†1.1KΩ	2.2 Meg.	5.8KΩ 820Ω	.1Ω	.1Ω	†1.1KΩ	2.2 Meg.	5.8KΩ 820Ω	0Ω
V 20	6AL5	5.6KΩ	5.6KΩ	0Ω	.1Ω	4.8 Meg.	0Ω	4.8 Meg.		
V 21	6SN7GT	100KΩ	†280KΩ	1.5KΩ	5 Meg.	†8KΩ	1.5KΩ	.1Ω	0Ω	
V 22	6BG6G	41Ω	0Ω	82Ω	†11KΩ	1 Meg.	290KΩ	.1Ω	†14KΩ	TOP CAP #200Ω
V 23	6BG6G	†7KΩ	0Ω	82Ω	Inf.	1 Meg.	Inf.	.1Ω	†14KΩ	TOP CAP #200Ω
V 24	6W4GT	Inf.	Inf.	#0Ω	†100Ω	†70Ω †100Ω	Inf,	†0Ω	†0Ω	
V 25	6W4GT	Inf.	Inf.	#0Ω	Inf.	†70Ω †100Ω	Inf.	†0Ω	†0Ω	
V 26	1B3GT	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	TOP CAP #160Ω
V 27	5U4G	Inf.	10KΩ	Inf.	17Ω	Inf.	17Ω	Inf.	10KΩ	
V 28	5U4G	Inf.	10KΩ	Inf.	17Ω	Inf.	17Ω	Inf.	10KΩ	
V 29	19AP4	0Ω	270KΩ	PIN 10 †1000Ω	PIN 11 0Ω	PIN 12 .1Ω				

† MEASURED FROM PIN 8 OF V28.
# MEASURED FROM PIN 3 OF V24.
▲ MEASURED WITH RANGE RANGE SWITCH IN LO-BAND POSITION.
■ MEASURED WITH RANGE SWITCH IN HI-BAND POSITION.

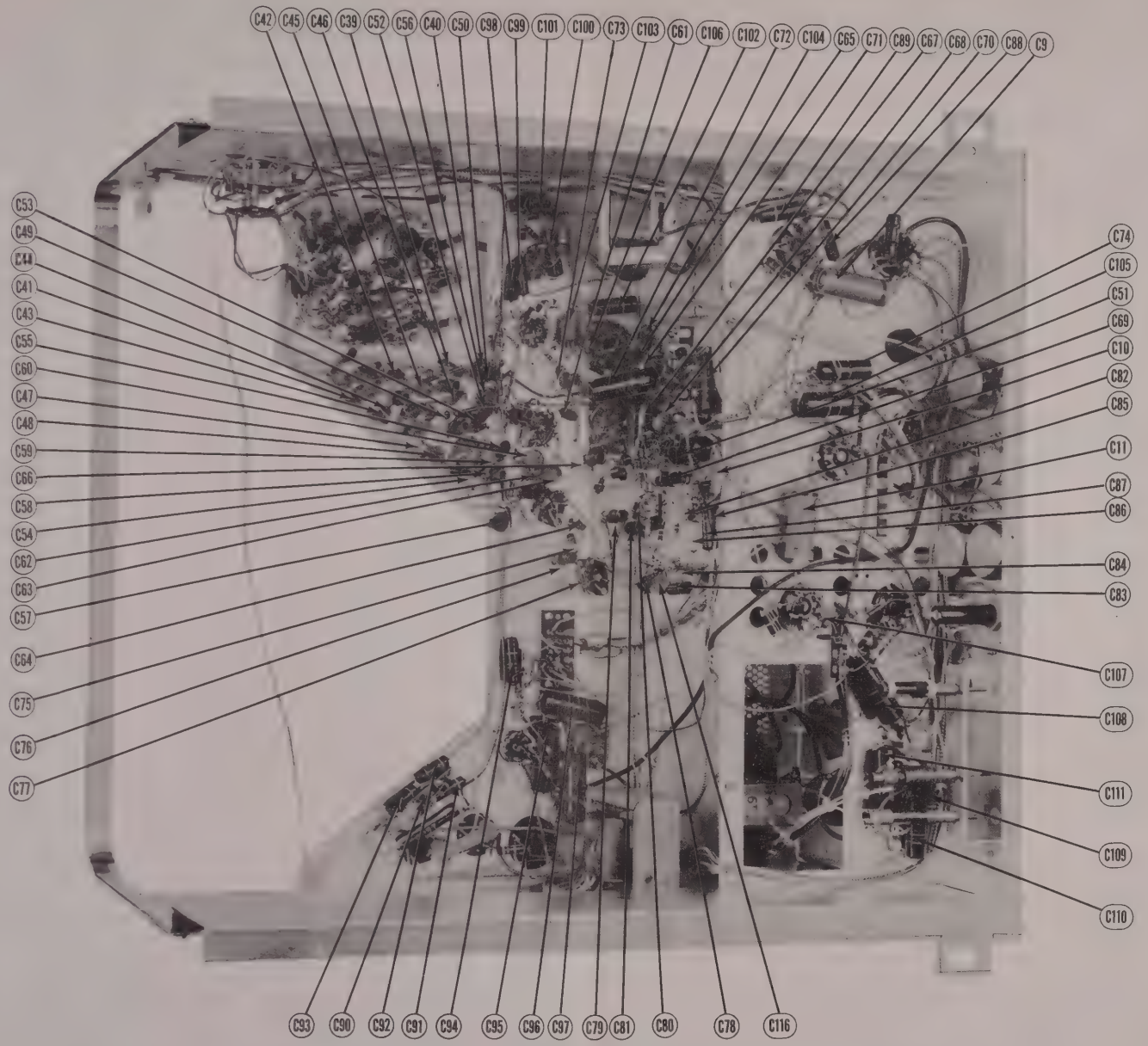
1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltage measured at 1,000 ohms.
2. Pin numbers are counted in a clockwise direction on bottom of socket.
3. Measured values are from socket pin to common negative unless otherwise stated.
4. Line voltage maintained at 117 volts for voltage readings.
5. Front panels controls set at minimum.
6. Where readings may vary according to the setting of the service controls, both minimum and maximum readings are given.



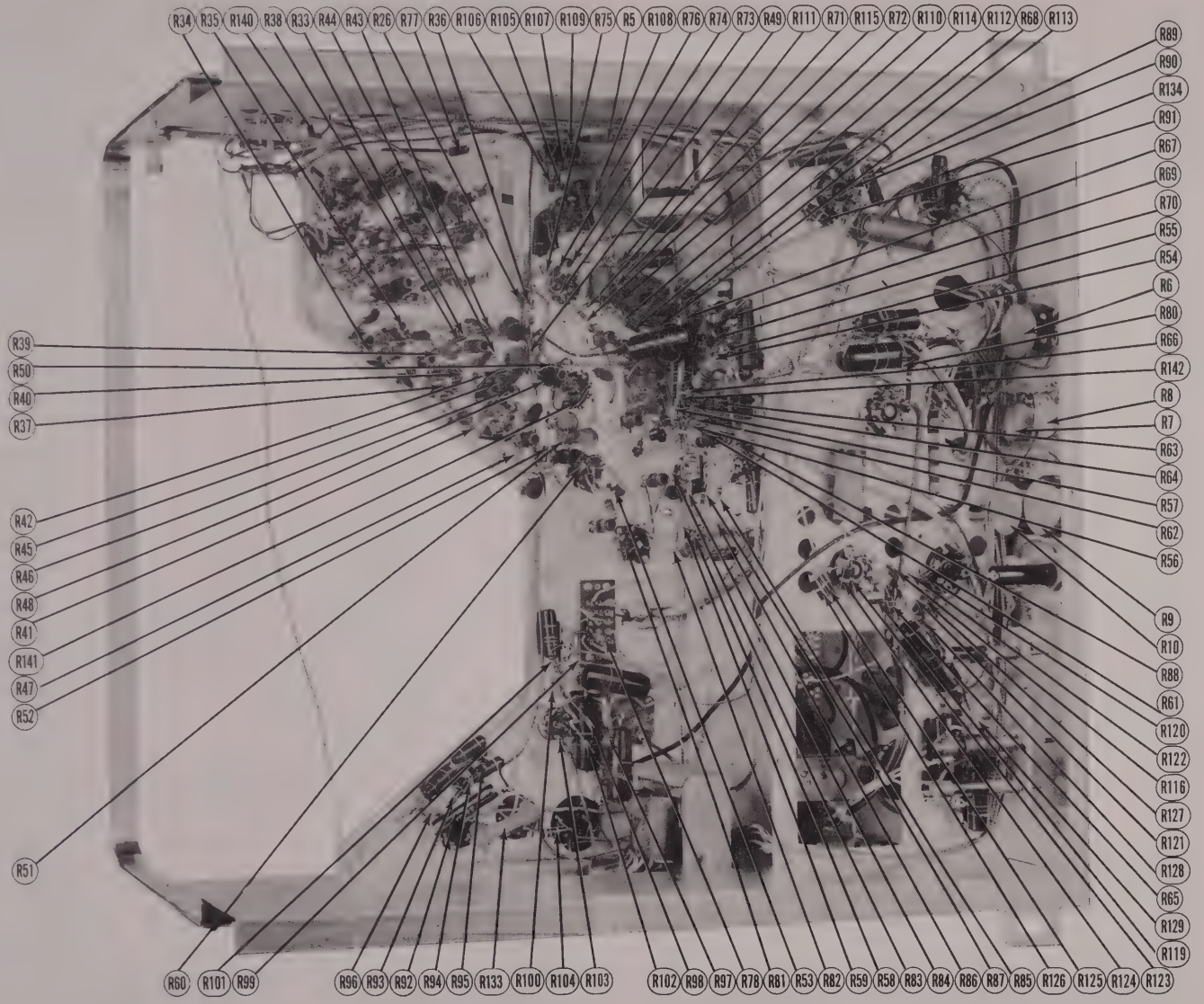
POWER SUPPLY CHASSIS-TOP VIEW



POWER SUPPLY CHASSIS-BOTTOM VIEW



CHASSIS BOTTOM VIEW-CAPACITOR IDENTIFICATION



CHASSIS BOTTOM VIEW-RESISTOR IDENTIFICATION

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RMA BASE TYPE	NOTES
		STROM.-CARL. PART No.	STANDARD REPLACEMENT		
V1	Lo Band RF Amp.	6BH6	6BH6	7CM	
V2	Hi Band RF Amp.	6AG5	6AG5	7BD	
V3	Low Band Converter	6J6	6J6	7BF	
V4	Hi Band Converter	6J6	6J6	7BF	
V5	1st Video IF	6BH6	6BH6	7CM	
V6	2nd Video IF	6BH6	6BH6	7CM	
V7	3rd Video IF	6BH6	6BH6	7CM	
V8	4th Video IF	6AH6	6AH6	7BK	
V9	Video Det.	6AL5	6AL5	6BT	
V10	Video Amp.	6AU6	6AU6	7BK	
V11	Video Output	6AQ5	6AQ5	7BZ	
V12	AGC Amp.	6AU6	6AU6	7BK	
V13	DC Rest.-Sync. Sep.-Sync. Phase Inv.	12AU7	12AU7	9A	
V14	1st Sound IF	6AU6	6AU6	7BK	
V15	2nd Sound IF	6AU6	6AU6	7BK	
V16	Ratio Det.-AF Amp.	6T8	6T8	9E	
V17	Audio Output	6V6GT	6V6GT	7AC	
V18	Vert. Osc.	6C4	6C4	6BG	
V19	Vert. Amp.	12AU7	12AU7	9A	
V20	Hor. Phase Det.	6AL5	6AL5	6BT	
V21	Hor. Multivib.	6SN7GT	6SN7GT	8BD	
V22	Hor. Output	6BG6G	6BG6G	5BT	
V23	Hor. Output	6BG6G	6BG6G	5BT	
V24	Damper	6W4GT	6W4GT	4CG	
V25	Damper	6W4GT	6W4GT	4CG	
V26	HV Rect.	1B3GT	1B3GT	3C	
V27	LV Rect.	5U4G	5U4G	5T	
V28	LV Rect.	5U4G	5U4G	5T	
V29	Picture Tube	19AP4	19AP4	12D	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA					IDENTIFICATION CODES AND INSTALLATION NOTES
	CAP.	VOLT	STROM.-CARL. PART No.	AEROVOX PART No.	CENTRALAB PART No.	ERIE PART No.	SPRAGUE PART No.	
C1	100	300	111076	AFH20G			TVL-4	Filter
C2	100	300	111077	AFH20G			TVL-4	Filter
C3	100	300	111075	AFH20G			TVL-4	Filter
C4	100	300	111078	AFH20G			TVL-4	Filter
C5A	40	450	111074	AFH88J			TVL-64	■ Filter
B	40	450						▲ Filter
C6A	40	450	111072	AF8422J			D12991	▲ Decoupling
B	20	450						■ Decoupling
C	10	450						▲ 1st V. Amp. Screen Bypass
D	10	450						Decoupling
C7A	.5Ω 15750∿	12	111052	PRS6/1500			D12966	▲ Hor. Cent. Cont. Bypass
B	2.5Ω 60 ∿	6		PRS6/1000				▲ Vert. Cent. Cont. Bypass
C8A	10	450	111073	AF2J20B			D12992	▲ Vert. Output Decoupling
B	100	50						▲ Vert. Output Cath. Bypass
C9	25	25	111069	PRS25/25			TVA-6	Output Cathode Bypass
C10	1	50	111063	PRS150/4			TVA-11	Stabilizing Cap.
C11	25	25	111069	PRS25/25			TVA-6	Hor. Output Cathode Bypass
C12	220		110462	GP220M	D6-221	GP2K-220		RF Coupling
C13	750		110654	GP750M	D6-751	GP2K-750		AGC Filter
C14	750		110654	GP750M	D6-751	GP2K-750		L. B. RF Screen Bypass
C15	750		110654	GP750M	D6-751	GP2K-750		RF Bypass
C16	2000		110652	GP2000M	D6-202	GP2M-002		L. B. RF Plate Decoupling
C17	4.5		110667	CN4.5DNPO	D2-4.7	NPOK-4.7		RF Coupling
C10	4.5		110667	CN4.5DNPO	D2-4.7	NPOK-4.7		RF Coupling
C19	5.5		110655	CN5.5DNPO		NPOK-5		RF Coupling
C20	220		110462	GP220M	D6-221	GP2K-220		RF Coupling
C21	75		110483	GP75K	D6-750	GP1K-75		H. B. RF Screen Bypass
C22	75		110483	GP75K	D6-750	GP1K-75		RF Bypass
C23	2000		110652	GP2000M	D6-202	GP2M-002		H. B. RF Plate Decoupling
C24	5000		110586	BPD-5	D6-502	811-005	29C1	H. B. RF Fil. Bypass
C25	2000		110652	GP2000M	D6-202	GP2M-002		L. B. Conv. Grid Filter
C26	5000		110586	BPD-5	D6-502	811-005	29C1	L. B. Conv. Fil. Bypass
C27	10		110656	SI10FN750	DN-10	N750K-10		Fixed Trimmer
C28	1.5		110438		D2-1.5	NPOK-1.5		Osc. Coupling
C29	750		110654	GP750M	D6-751	GP2K-750		L. B. Osc. Decoupling
C30	10		110656	SI10FN750	DN-10	N750K-10		Fixed Trimmer
C31	22		110653	GP22K	D6-220	GP1K-22		L. B. Osc. Grid Cap.
C32	2000		110652	GP2000M	D6-202	GP2M-002		H. B. Conv. Grid Filter
C33	5000		110586	BPD-5	D6-502	811-005	29C1	H. B. Conv. Fil. Bypass
C34	750		110654	GP750M	D6-751	GP2K-750		H. B. Osc. Plate Dec.
C35	10		110656	SI10FN750	DN-10	N750K-10		Fixed Trimmer
C36	22		110653	GP22K	D6-220	GP1K-22		H. B. Osc. Grid Cap.
C37	5000		110586	BPD-5	D6-502	811-005	29C1	RF Bypass
C38	5000		110586	BPD-5	D6-502	811-005	29C1	RF Bypass
C39	5000		110586	BPD-5	D6-502	811-005	29C1	AGC Filter
C40	5000		110586	BPD-5	D6-502	811-005	29C1	RF Bypass
C41	5000		110586	BPD-5	D6-502	811-005	29C1	AGC Filter
C42	5000		110586	BPD-5	D6-502	811-005	29C1	1st V. IF Fil. Bypass
C43	5000		110586	BPD-5	D6-502	811-005	29C1	1st V. IF Screen Bypass
C44	5000		110586	BPD-5	D6-502	811-005	29C1	1st V. IF Plate Decoupling
C45	5000		110586	BPD-5	D6-502	811-005	29C1	AGC Filter
C46	5000		110586	BPD-5	D6-502	811-005	29C1	2nd V. IF Fil. Bypass
C47	470		110464	GP470M	D6-471	GP2K-470	1FM-35	2nd V. IF Screen Bypass
C48	5000		110586	BPD-5	D6-502	811-005	29C1	2nd V. IF Plate Decoupling
C49	2.2		110439		D2-2.2			Fixed Trimmer
C50	5000		110586	BPD-5	D6-502	811-005	29C1	AGC Filter
C51	.47	200	110533	P288-47			TC-5	AGC Filter
C52	5000		110586	BPD-5	D6-502	811-005	29C1	AGC Filter
C53	5000		110586	BPD-5	D6-502	811-005	29C1	3rd V. IF Fil. Bypass
C54	470		110464	GP470M	D6-471	GP2K-470	1FM-35	3rd V. IF Screen Bypass
C55	5000		110586	BPD-5	D6-502	811-005	29C1	3rd V. IF Plate Decoupling
C56	5000		110586	BPD-5	D6-502	811-005	29C1	RF Bypass

PARTS LIST AND DESCRIPTIONS (Continued)

CAPACITORS (CONT.)

ITEM No.	RATING CAP	VOLT	REPLACEMENT DATA STROM. CARL. PART No.	AEROVOX PART No.	CENTRALAB PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C57	5000		110586	BPD-5	D6-502	811-005	29C1	RF Bypass
C58	2.2		110439		D2-2.2			IF Coupling
C59	22		110453	GP22K	D6-220	GPIK-22		Fixed Trimmer
C60	5000		110586	BPD-5	D6-502	811-005	29C1	4th V. IF Cath. Bypass
C61	5000		110586	BPD-5	D6-502	811-005	29C1	4th V. IF Fil. Bypass
C62	5000		110586	BPD-5	D6-502	811-005	29C1	4th V. IF Screen Bypass
C63	5000		110586	BPD-5	D6-502	811-005	29C1	4th V. IF Plate Decoupling
C64	5		110598	GP5K	D2-4.7	NPOK-5	MS-55	V. Diode Filter
C65	.1	400	110546	P488-1			TM-1	1st V. Amp. Screen Bypass
C66	68		110459	GP68K	D6-680	GPIK-68	MS-47	Fixed Trimmer
C67	.1	400	110546	P488-1			TM-1	Video Coupling
C68	.001	600	110549	P688-001	D6-102	GP2L-001	TM-21	Hor. Sweep Coupling
C69	.0047	400	110538	P688-0047	D6-472	GP2M-0047	TM-25	AGC Filter
C70	.1	400	110546	P488-1			TM-1	AGC Filter
C71	22		110453	GP22M	D6-220	GPIK-22	MS-425	2nd V. Amp. Cathode Bypass
C72	.1	600	110561	P688-1			TM-1	Video Coupling
C73	68		110459	GP68K	D6-680	GPIK-68	MS-47	Fixed Trimmer
C74	.1	400	110546	P488-1			TM-1	Plc. Tube Cathode Bypass
C75	2.5		110484	C12.5CNPO	D2-2.2	NPOK-2.5	S. IF Coupling	
C76	68		110459	GP68K	D6-680	GPIK-68	MS-47	Fixed Trimmer
C77	47		110402	GP47K	D6-470	GPIK-47	MS-45	S. IF Coupling
C78	.022	400	110542	P488-022			TM-12	1st S. IF Decoupling
C79	68		110459	GP68K	D6-680	GPIK-68	MS-47	Fixed Trimmer
C80	47		110402	GP47K	D6-470	GPIK-47	MS-45	S. IF Coupling
C81	.022	400	110543	P488-022			TM-12	2nd S. IF Decoupling
C82	330		110454	GP330M	D6-331	GP2K-330	1FM-335	Diode Load Cap.
C83	.0033	400	110537	P688-0033	D6-332	GP2M-0033	TM-23	De-emphasis
C84	047	200	110660	P288-047			TM-15	Audio Coupling
C85	.0047	400	110538	P688-0047	D6-472	GP2M-0047	TM-25	Audio Coupling
C86	100		110451	GP100M	D6-101	GPIK-100	1FM-31	AF Amp. Plate Bypass
C87	.0047	400	110538	P688-0047	D6-472	GP2M-0047	TM-25	Tone Compensation
C88	01	400	110540	P488-01	D6-103	821-01	TM-11	Audio Coupling
C89	022	600	110557	P688-022			TM-12	Output Plate Bypass
C90	0022	400	110536	P688-0022	D6-222	GP2M-0022	TM-22	Integrator Net.
C91	.0047	400	110538	P688-0047	D6-472	GP2M-0047	TM-25	Integrator Net.
C92	.0047	400	110538	P688-0047	D6-472	GP2M-0047	TM-25	Integrator Net.
C93	.0047	400	110538	P688-0047	D6-472	GP2M-0047	TM-25	Vert. Osc. Grid Cap.
C94	033	400	110543	P488-033			TM-13	Vert. Discharge
C95	22	400	110548	P488-22			TC-2	Vert. Sweep Coupling
C96	22	400	110548	P488-22			TC-2	Vert. Osc. Decoupling
C97	1	600	110561	P688-1			TM-1	RF Bypass
C98	001	400	110534	P688-001	D6-102	GP2L-001	TM-21	Hor. Sync. Coupling
C99	001	400	110534	P688-001	D6-102	GP2L-001	TM-21	Hor. Sync. Coupling
C100	01	600	110557	P688-022	D6-103		TM-12	Integrator Net. #
C101	0047	400	110538	P688-0047	D6-472	GP2M-0047	TM-25	AFC Filter
C102	.047	400	110544	P488-047			TM-15	AFC Filter
C103	3900	500	110272	1464-004			MS-24	Fixed Trimmer
C104	270	500	110208	1468-00025	D6-271	GP2K-270	1FM-325	Hor. MV Feedback
C105	.1	600	110561	P688-1			TM-1	RF Bypass
C106	390	500	110216	1468-0004	D6-391	GP2K-390	1FM-34	Hor. Discharge
C107	270	500	110208	1468-00025	D6-271	GP2K-270	1FM-325	Hor. Sweep Coupling
C108	.1	600	110561	P688-1			TM-1	Hor. Output Screen Bypass
C109	.15	400	110547	P488-15				Damper Filter
C110	.047	400	110550	P488-047			TM-15	Damper Filter
C111	.22	400	110548	P488-22				Damper Filter
C112	500	20000	110595			TV1-502		HV Filter
C113	500	20000	110595			TV1-502		HV Filter
C114	01	1000	110568	P1068-01			TM-11	Line Filter
C115	01	1000	110568	P1068-01			TM-11	Line Filter
C116	5000		110586	BPD-5	D6-502	811-005	29C1	RF Bypass †

* Some models use .022MFD in this application.
† Not used in all models.

CONTROLS

ITEM No	RATING RESISTANCE	WATTS	REPLACEMENT DATA Strom Carl. PART No	IRC PART No.	CLAROSTAT PART No	CENTRALAB PART No.	INSTALLATION NOTES
R1A	5000Ω		145095		145095	SBB-518-S	Tone control-panel
B	250KΩ						Volume control and switch-rear
R2	500KΩ		145103				Brightness control
R2A	50KΩ			B11-23 *			Horiz. hold control-panel
B	2 Meg.		145092	B11-139 *	145092	SBB-519	Vert. hold control-rear
C	Shaft End			E-202 *			Attach per instructions in "Concentrikit".
R4	5000Ω	25	145096	PW-25-5000	PW-25-5000		Focus control-Wire Wound
R5	2000Ω	2	145094	W-2000	43-2000	V-131	Contrast control-Wire Wound
R6	500Ω	2	145098	W-500	43-500	V-127	Horiz. linearity control-Wire Wound
R7A	5000Ω	1	145079	QU-114	M-19-S	AN-12	Vert. linearity control
B	Shaft		Not Req	Not Req	Not Req	AK-1	Attach to R7A per instructions
R8A	6 Meg.	1	145100	QU-143	145100	AN-87	Vert. size control
B	Shaft		Not Req	Not Req.	Not Req	AK-1	Attach to R8A per instructions
R9	30Ω	2	145065	W-30 x 15	43-30 CT	SVT-902	Vert. centering control-Wire Wound-tapped at 15Ω
R10	30Ω	2	145066	W-30	43-30	V-112	Horiz. centering control-Wire Wound

* Additional parts to be used with "Concentrikit".

RESISTORS

ITEM No	RATING RESISTANCE	WATTS	REPLACEMENT DATA STROM CARL. PART No	IRC PART No.	IDENTIFICATION CODES ALL RESISTORS ARE ± 10% UNLESS OTHERWISE STATED.
R11	560Ω		28155		Low Band RF Grid
R12	10000Ω 20%		149101	BTS-1000	Low Band RF Plate Decoupling
R13	33KΩ 20%		149110	BTS-33K	Low Band RF Screen
R14	3900Ω 20%		149096		Decoupling Network
R15	2200Ω 20%		149102	BTS-2200	RF Trap Coil Shunt
R16	1000Ω 20%		149101	BTS-1000	AGC Network
R17	2200Ω 20%		149103	BTS-2200	High Band RF Grid
R18	1000Ω 20%		149101	BTS-1000	High Band RF Plate Decoupling
R19	33KΩ 20%		149110	BTS-33K	High Band RF Screen
R20	1500Ω 20%		149096		Decoupling Network
R21	10KΩ 20%		149107	BTS-10K	Low Band Conv. Grid Coil Shunt
R22	10KΩ 20%		149107	BTS-10K	Conv. Plate
R23	47000Ω 20%		149105	BTS-4700	Low Band Osc. Plate
R24	150Ω 20%		149096		Low Band Osc. Plate Decoupling
R25	10KΩ 20%		149107		Low Band Osc. Grid

RESISTORS (CONT.)

ITEM No	RATING RESISTANCE	WATTS	REPLACEMENT DATA STROM-CARL. PART No.	IRC PART No.	IDENTIFICATION CODES
R26	100Ω 20%		149095		Decoupling Network
R27	150Ω 20%		149096		Decoupling Network
R28	10000Ω 20%		149101	BTS-1000	Low Band Conv. Grid
R29	10000Ω 20%		149101	BTS-1000	High Band Conv. Grid
R30	100KΩ 20%		149113	BTS-100K	Conv. Grid
R31	47000Ω 20%		149105		High Band Osc. Plate
R32	2700Ω		28163	BTS-2700	High Band Osc. Grid
R33	10000Ω 20%		149101	BTS-1000	AGC Network
R34	10KΩ		28170	BTS-10K	1st Video IF Transformer Shunt
R35	82Ω		28145		1st Video IF Cathode
R36	10000Ω 20%		149101	BTS-1000	1st Video IF Screen
R37	100Ω 20%		149095		Decoupling Network
R38	3300 20%		149098		AGC Network
R39	15KΩ		28172	BTS-15K	2nd Video IF Transformer Shunt
R40	82Ω		28145		2nd Video IF Cathode
R41	10000Ω 20%		149101	BTS-1000	2nd Video IF Screen
R42	100Ω 20%		149095		Decoupling Network
R43	3300 20%		149098		AGC Network
R44	10000Ω 20%		149101	BTS-1000	AGC Network
R45	6800Ω		28168	BTS-6800	3rd Video IF Transformer Shunt
R46	82Ω		28145		3rd Video IF Cathode
R47	39KΩ		28176	BTS-39K	Screen Dropping
R48	100Ω 20%		149095		3rd Video IF Plate Decoupling
R49	100Ω 20%		149095		Decoupling Network
R50	6800Ω		28168		4th Video IF Transformer Shunt
R51	39KΩ		28176		4th Video IF Screen
R52	100Ω 20%		149095		4th Video IF Plate Decoupling
R53	3900Ω		28165	BTS-3900	Video Det. Diode Load
R54	10 Meg. 20%		149125	BTS-10 Meg.	Voltage Divider
R55	10 Meg. 20%		149125	BTS-10 Meg.	Voltage Divider
R56	2700Ω		28163	BTS-2700	1st Video Amp. Plate
R57	1200Ω		28159	BTS-1200	1st Video Amp. Plate
R58	10KΩ		28170	BTS-10K	1st Video Amp. Screen
R59	15KΩ		28172	BTS-15K	Voltage Divider
R60	100KΩ 20%		149113	BTS-100K	Voltage Divider
R61	47KΩ 20%		149111	BTS-47K	AGC Network
R62	47KΩ 20%		149111	BTS-47K	AGC Network
R63	100KΩ 20%		149113	BTS-100K	AGC Network
R64	47KΩ 20%		149111	BTS-47K	AGC Network
R65	18KΩ		28173	BTS-18K	AGC Amp. Screen
R66	27KΩ	1	34578	BTA-27K	Voltage Divider
R67	1 Meg. 20%		149119	BTS-1 Meg.	2nd Video Amp. Grid
R68	330Ω	1	149171	BTA-330	2nd Video Amp. Cathode
R69	1500Ω	2	149046	BT-2-1500	2nd Video Amp. Plate
R70	1500Ω	2	149046	BT-2-1500	2nd Video Amp. Plate
R71	270KΩ		28184	BTS-270K	DC Rest. Load
R72	2200Ω 20%		149103	BTS-2200	Picture Tube Grid
R73	1.8 Meg.		28194	BTS-1.8 Meg.	Sync. Phase Inv. Grid
R74	3900Ω		28165	BTS-3900	Sync. Phase Inv. Cathode
R75	5600Ω		149184	BTA-5600	Sync. Phase Inv. Plate
R76	22KΩ 20%		149109	BTS-22K	Voltage Divider
R77	4.7 20%		149252	BW-1-4.7	Series Pilot Lamp
R78	220KΩ 20%		28183	BTS-220K	Voltage Divider
R79	10KΩ 20%		149107	BTS-10K	Voltage Divider
R80	1000Ω 20%		149101	BTS-1000	Acc. Anode Decoupling
R81	47KΩ 20%		149111		1st Sound IF Grid
R82	15KΩ		28172	BTS-15K	1st Sound IF Decoupling
R83	47KΩ 20%		149111		2nd Sound IF Grid
R84	15KΩ		28172	BTS-15K	2nd Sound IF Decoupling
R85	22KΩ		27407	BTS-22K	Ratio Det. Diode Load
R86	22KΩ		27407	BTS-22K	Ratio Det. Diode Load
R87	18KΩ		28173	BTS-18K	De-emphasis
R88	10 Meg. 20%		149125	BTS-10 Meg.	AF Amp. Grid
R89	470KΩ 20%		149117	BTS-470K	AF Amp. Plate
R90	470KΩ 20%		149117	BTS-470K	Output Grid
R91	270Ω	1	149170	BW-1-270	Output Cathode
R92	1500Ω	10	46221	AB-1500	Decoupling-Wire Wound
R93	22KΩ 20%		149109	BTS-22K	Integrator Network
R94	8200Ω		28169	BTS-8200	Integrator Network
R95	8200Ω		28169	BTS-8200	Integrator Network
R96	1.5 Meg. 20%		149120	BTS-1.5 Meg.	Vert. Osc. Grid
R97	100KΩ 20%		149113	BTS-100K	Voltage Divider
	6.8 Meg. 20%		149124	BTS-6.8 Meg.	Voltage Divider
R99	10KΩ		28170	BTS-10K	Vert. Peaking
R100	1.8 Meg.		28194	BTS-1.8 Meg.	Voltage Divider
R101	2.2 Meg. 20%		149121	BTS-2.2 Meg.	Voltage Divider
R102			28157	BTS-820	Vert. Amp. Cathode
R103	2.2 Meg. 20%		149121	BTS-2.2 Meg.	Vert. Amp. Grid
R104	470Ω	1	31215	BTA-470	Vert. Amp. Decoupling
R105	100KΩ		28006	BTS-100K	Horiz. Phase Det. Load
R106	100KΩ		28006	BTS-100K	Horiz. Phase Det. Load
R107	4.7 Meg. 20%		149123	BTS-4.7 Meg.	Horiz. Phase Det. Load
R108	5600Ω		149184	BTA-5600	Feedback Network
R109	470KΩ 20%		149117	BTS-470K	Horiz. AFC Filter Network
R110	1500Ω 20%		149102	BTS-1500	Horiz. Osc. Cathode
R111	5600Ω		149184	BTA-5600	Horiz. Osc. Plate
R112	2200Ω 20%		149103	BTS-2200	Horiz. Osc. Plate Decoupling
R113	100KΩ 20%		149113	BTS-100K	Horiz. Osc. Grid
R114	270KΩ		28184	BTS-270K	Horiz. Osc. Plate
R115	10KΩ		28170	BTS-10K	Horiz. Peaking
R116	100Ω 20%		149095		Parasitic Supp.
R117	47Ω 20%				Parasitic Supp.
R118	47Ω 20%				Parasitic Supp.
R119	100Ω 20%		149095		Parasitic Supp.
R120	100Ω 20%		149095		Parasitic Supp.
R121	100Ω 20%		149095		Parasitic Supp.
R122	1 Meg. 20%		149119	BTS-1 Meg.	Horiz. Output Grid
R123	82Ω	1	149166	BW-1-82	Horiz. Output Cathode
R124	82Ω	1	149166	BW-1-82	Horiz. Output Cathode
R125	82Ω	1	149166	BW-1-82	Horiz. Output Cathode
R126	82Ω	1	149166	BW-1-82	Horiz. Output Cathode
R127	6800Ω	2	149053	BT-2-6800	Horiz. Output Screen
R128	6800Ω	2	149053	BT-2-6800	Horiz. Output Screen
R129	15KΩ	1	149186	BTA-15K	Horiz. Size Coil Shunt
R130	10KΩ 20%	2	149082		Current Limiting

RESISTORS (CONT.)

ITEM No.	RATING RESISTANCE	WATTS	REPLACEMENT DATA STROM-CARL. PART No.	IRC PART No.	IDENTIFICATION CODES
R131	3.3Ω	1	149314		HV Rect. Filament
R132	680KΩ 20%	1	149155		HV Filter
R133	2000Ω	10	149357	AB-2000	Filter-Wire Wound
R134	500Ω	5	149313	AB-500	Focus Coil Shunt-Wire Wound
R135	1000Ω	10	149216	AB-1000	Filter-Wire Wound
R136	100KΩ 20%	1	149150	BTA-100K	Bleeder
R137	100KΩ 20%	1	149150	BTA-100K	Bleeder
R138	100KΩ 20%	1	149150	BTA-100K	Bleeder
R139	100KΩ 20%	1	149150	BTA-100K	Bleeder
R140	27KΩ	1	34578	BTA-27K	Voltage Divider
R141	150Ω	½	149096		4th Video IF Cathode
R142	33KΩ	½	149110	BTS-33K	AGC Amp. Grid

TRANSFORMER (POWER)

ITEM No.	RATING PRI.	SEC. 1	SEC. 2	SEC. 3	REPLACEMENT DATA STROM.-CARL. PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.
T1	117VAC ⓖ 2.9A	780VCT .320ADC	6.3VAC ⓖ 2.4A Tap ⓖ 5VAC ⓖ 6A	12.6VCT ⓖ 4.4A BSC. 4 6.3VAC ⓖ .030A	161421		P-3174	

TRANSFORMER (SWEEP CIRCUITS)

ITEM No.	RATING DC RESISTANCE PRI.	SEC.	REPLACEMENT DATA STROM.-CARL. PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	NOTES
T2	165Ω	1.4KΩ	114658	A-8121 ①	A-4000 ①	TBO-2	Vert. Block Osc. Trans.
T3	160Ω Tap ⓖ	4.2Ω Tap ⓖ .32Ω	161024				Hor. Output Trans.
	124Ω	SEC. 2 0Ω					
T4	595Ω	7.1Ω	161247	A-8115 ②	A-3035 ②	TSO-1 ②	Vert. Output Trans.
T5A	10.7Ω		114672		MD-12		Hor. Deflection Coil
B	64Ω						Vert. Deflection Coil
T6	530Ω		114673				Focus Coil

① Drill one new mounting hole.
② Drill new mounting holes.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING IMPEDANCE PRI.	SEC.	DC RES. PRI.	SEC.	REPLACEMENT DATA Strom.-Carl. PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	INSTALLATION NOTES
T7	6KΩ	6.2Ω	477Ω	.78Ω	161248	A-3849	A-3019	RO-9 ①	① Drill one new mounting hole.

SPEAKER

ITEM No.	RATINGS FIELD RES.	V. C. IMP.	REPLACEMENT DATA STROM.-CARL. PART No.	JENSEN PART No.	QUAM PART No.	NOTES
SP1	PM	6.2Ω	155129	ST-103 MOD. P12-R	12A4	
	CONE DIA.	V. C. DIA.				
SP2	11 5/8"	1"				

FILTER CHOKE

ITEM No.	RATINGS TOTAL DIRECT CURRENT	D. C. RESISTANCE	INDUCTANCE (0 CURRENT 1000 ∞)	REPLACEMENT DATA STROM.-CARL. PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	INSTALLATION NOTES
L1	.320A	67Ω	3.9 Henries	161025	C-1722 ②	C-2996	TR-3300	② Drill new mounting holes.

COILS (RF-IF)

ITEM No.	USE	DC RES. PRI.	SEC.	REPLACEMENT DATA STROM.-CARL. PART No.	MEISSNER PART No.	NOTES
L2	Lo Band Ant. Trans.	0Ω	.1Ω	114057		Tapped primary and secondary
L3	Hi Band Ant. Trans.	0Ω	0Ω	114676		Tapped primary
L4	Lo Band RF Trans. Pri.	0Ω		114065		
L5	Lo Band RF Trans. Sec.	0Ω		114065		
L6	Lo Band RF Trap	0Ω		114642		
L7	Hi Band RF Trans. Pri.	0Ω		114066		
L8	Hi Band RF Trans. Sec.	0Ω		114066		

PARTS LIST AND DESCRIPTIONS (Continued)

COILS (RF-IF) CONT.

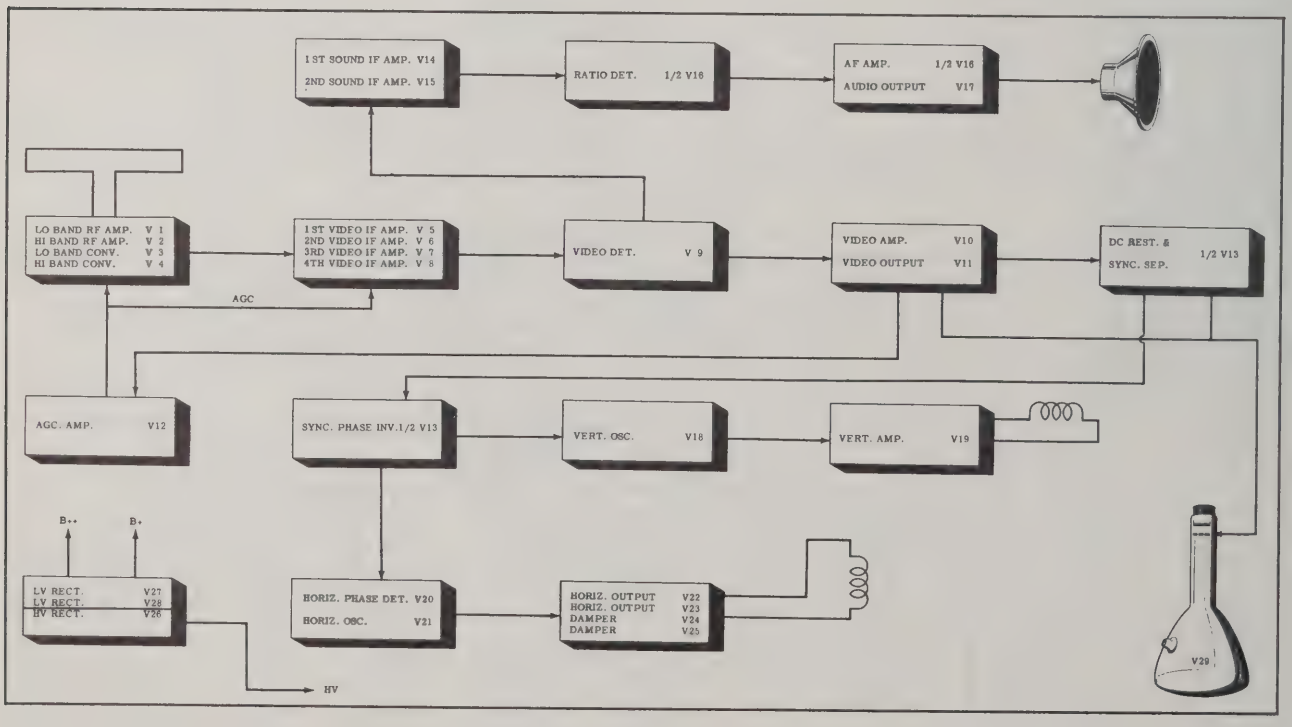
ITEM No.	USE	DC RES.		REPLACEMENT DATA		NOTES
		PRI.	SEC.	STROM-CARL. PART No.	MEISSNER PART No.	
L9	Hi Band Osc.	0Ω		114066		
L10	RF Choke	0Ω		114060		
L11	Lo Band Osc.	0Ω		114065		
L12	Conv. Trans. Pri.	.1Ω		114061		
L13	Conv. Trans. Sec.	0Ω	1.1Ω	114377		
L14	1st Video IF	1Ω	1Ω	114376		
L15	21.6MC Trap	2Ω		114384		
L16	2nd Video IF	1Ω	1Ω	114376		
L17	21.9MC Trap	.1Ω		114393		
L18	3rd Video IF	1Ω	1Ω	114382		
L19	4th Video IF	1Ω	1Ω	114391		
L20	Peaking	5.2Ω		114637		Wound on 5600Ω resistor.
L21	Peaking	2Ω		114392		
L22	Peaking	9Ω		114638		Wound on 16KΩ resistor.
L23	Peaking	8Ω		114639		
L24	Peaking	10Ω		114640		Wound on 18KΩ resistor.
L25	Peaking	10Ω		114641		
L26	4.5 MC Trap	2Ω		114383		
L27	1st Sound IF	2Ω		114388		
L28	2nd Sound IF	2Ω		114383		
L29	Ratio Det. Trans.	5.5Ω	1.2Ω	114375		
L30	Horiz. Osc. Trans.	105Ω		114069		
L31	Horiz. Lin.	9Ω		114667		Tapped at 3.2Ω
L32	Width	2.7Ω		114074		
L33	AGC Pulse Trans.	.2Ω	46Ω	114078		

DIAL LIGHTS

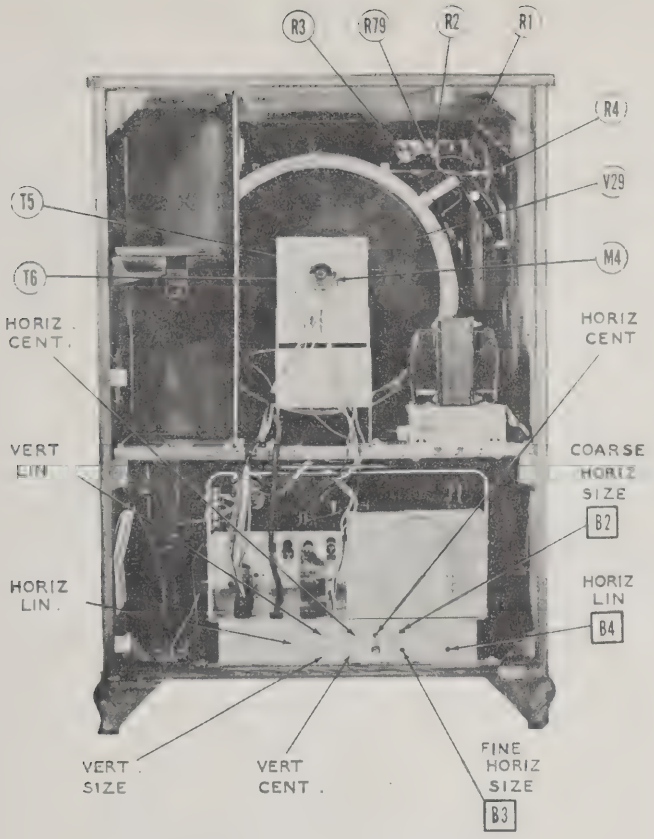
ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA STROM.-CARL. PART No.		NOTES
M1	Bayonet	6-8	.25	Blue			Type #44
M2	Bayonet	6-8	.25	Blue			Type #44

MISCELLANEOUS

ITEM No.	PART NAME	STROM.-CARL. PART No.	NOTES
M3	RF Tuner		
M4	Ion Trap		
M5	Fuse		Type 3AG 3/8A 250V
M6	Switch		Range
M7	Switch		Width
M8	Trimmer	110040	Horiz. drive 30-273MMF
M9	Trimmer	27081	Ant. 20-75MMF
M10	Trimmer	27081	Ant. 20-75MMF



BLOCK DIAGRAM



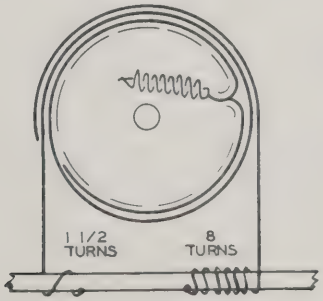
CABINET-REAR VIEW

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Turn the set on and tune in a TV station, preferably a test pattern.
Turn the horizontal hold control to the mid-position of its range.
Adjust the horizontal frequency slug (B1) until the picture synchronizes horizontally
Adjust the horizontal drive trimmer (B2) clockwise as far as possible without crowding in the picture.
Turn the horizontal size coarse switch to the left.
Adjust the horizontal size slug (B3) until the picture fills the mask horizontally. If sufficient width cannot be obtained, turn the size switch to the right. Note that in the maximum width position the coil (B3) is removed from the circuit.
Adjust the horizontal linearity slug (B4) until the picture is symmetrical from left to right.
Slight readjustment of B2 may be required for optimum results.

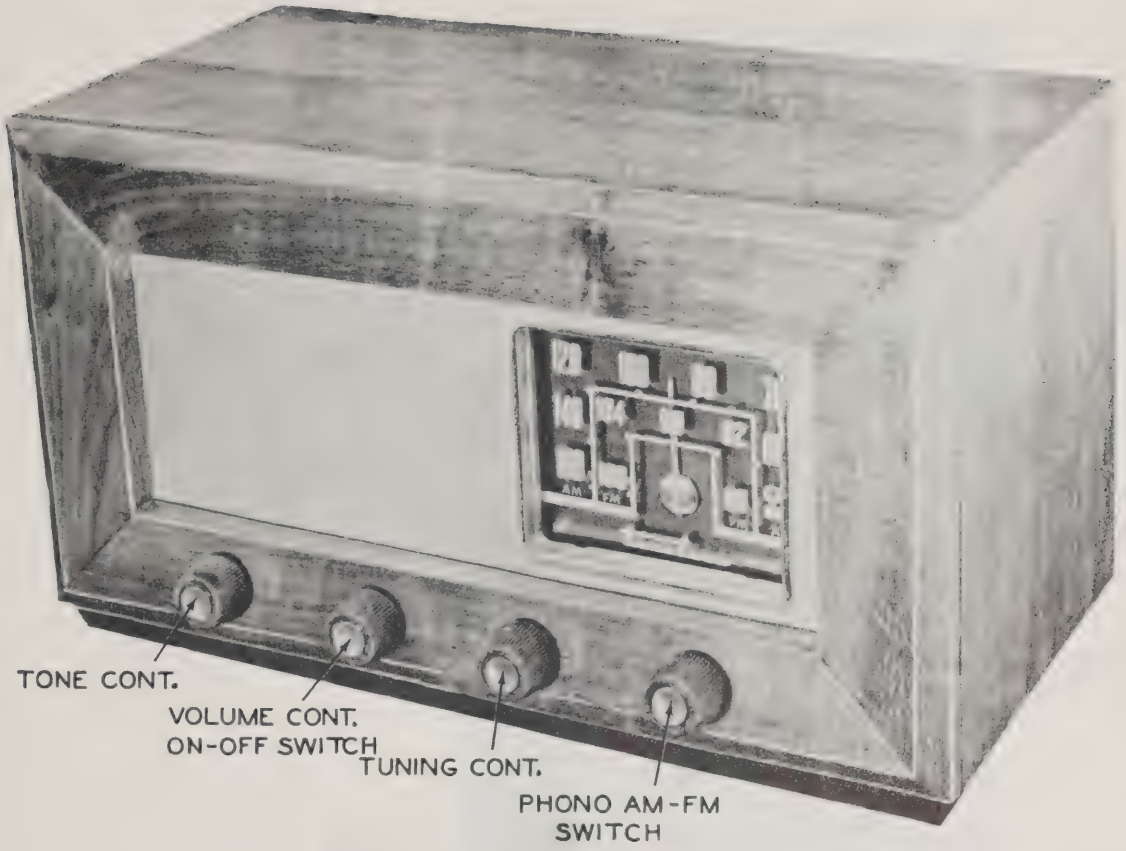
DISASSEMBLY INSTRUCTIONS

1. Remove nine push-on type control knobs.
2. Remove 5/16" hex head screw at power plug.
3. Remove seven screws and loosen four larger screws holding rear cover. Remove cover
4. Disconnect power plug at power unit.
5. Disconnect picture tube socket.
6. Disconnect deflection yoke lead at chassis plug.
7. Disconnect two lamp plugs at side of TV chassis.
8. Disconnect three control cables from chassis
9. Remove control lead cable plug from chassis.
10. Disconnect HV lead at breaker plug.
11. Disconnect speaker plug from chassis.
12. Remove three 3/8" hex head bolts holding chassis. Remove chassis.
13. Remove four clip-on nuts holding speaker. Remove speaker.
14. Disconnect off-on switch at plug in power unit.
15. Remove four 3/8" hex head bolts .holding power chassis. Remove chassis.



DIAL CORD STRINGING

TRUETONE
MODEL D2027A



TRUETONE
MODEL D2027A

TRADE NAME	Truetone, Model D2027A		
SUPPLIER	Western Auto Supply Co., 2107 Grand Ave., Kansas City, Mo.		
TYPE SET	AC Operated AM-FM Superheterodyne Receiver with Loop Antenna		
TUBES (EIGHT)	Types 12AT7 FM RF Amp.-Mixer, 6BE6 FM Osc.-AM Converter, 6BA6 IF Amp., 6BA6 Limiter, 6AL5 Ratio Det., 6AV6 DET-AVC-AF, 6V6GT Power Output, 6X5GT Rectifier		
POWER SUPPLY	105-125 Volts AC	RATING	.36 Amp. at 117 Volts AC
TUNING RANGE-BROADCAST	540-1600KC	FREQ. MOD.	88-108MC

HOWARD W. SAMS & CO., INC. • Indianapolis Indiana

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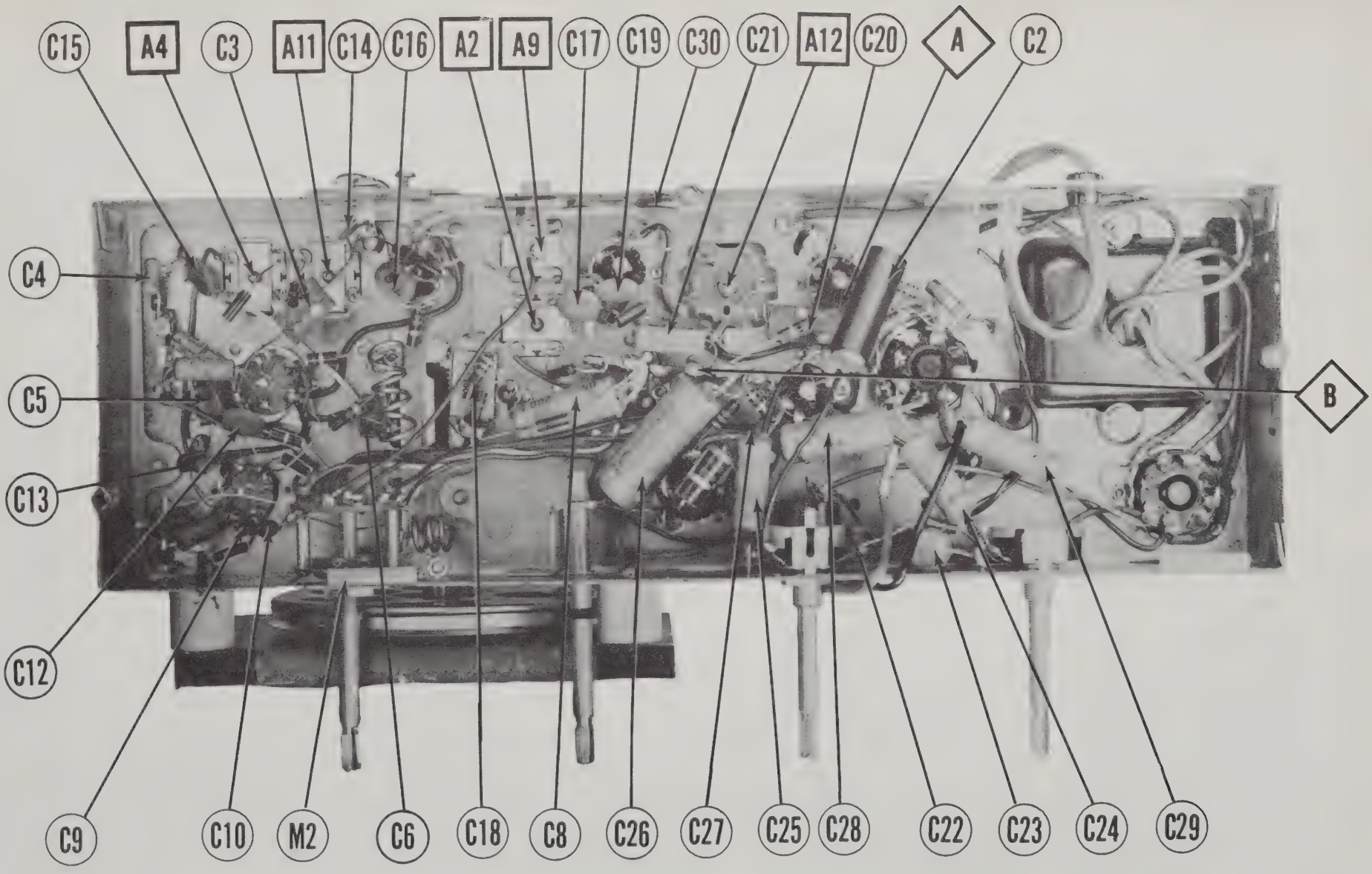
C15
A4
C3
A11
C14
C16
A2
A9
C17
C19
C30
C21
A12
C20
A
C2
C4
C5
C13
C12
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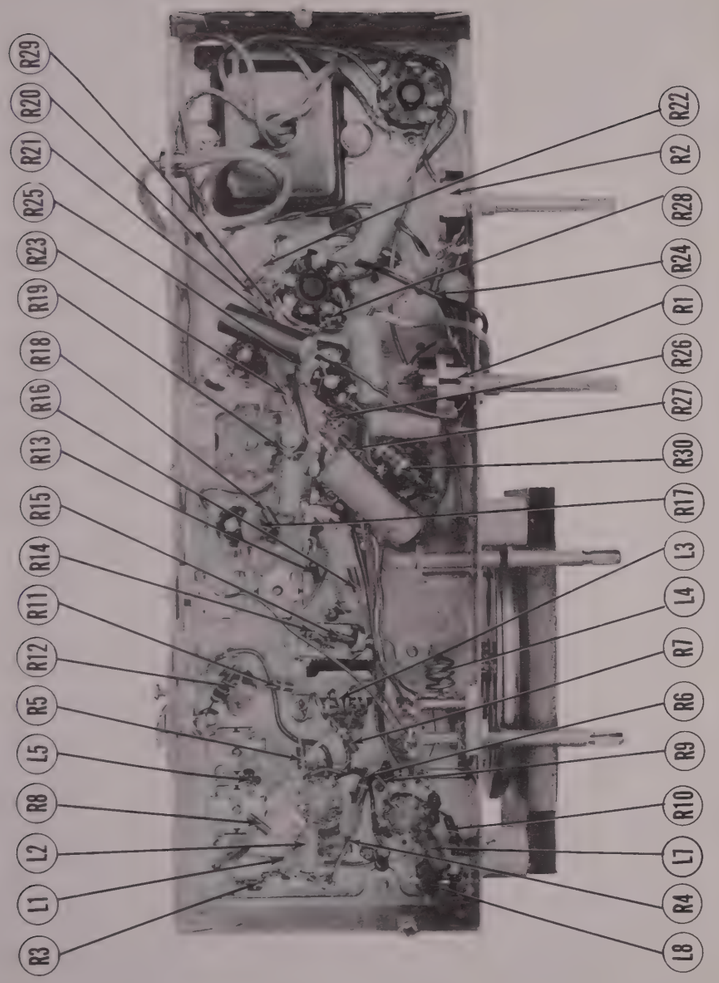

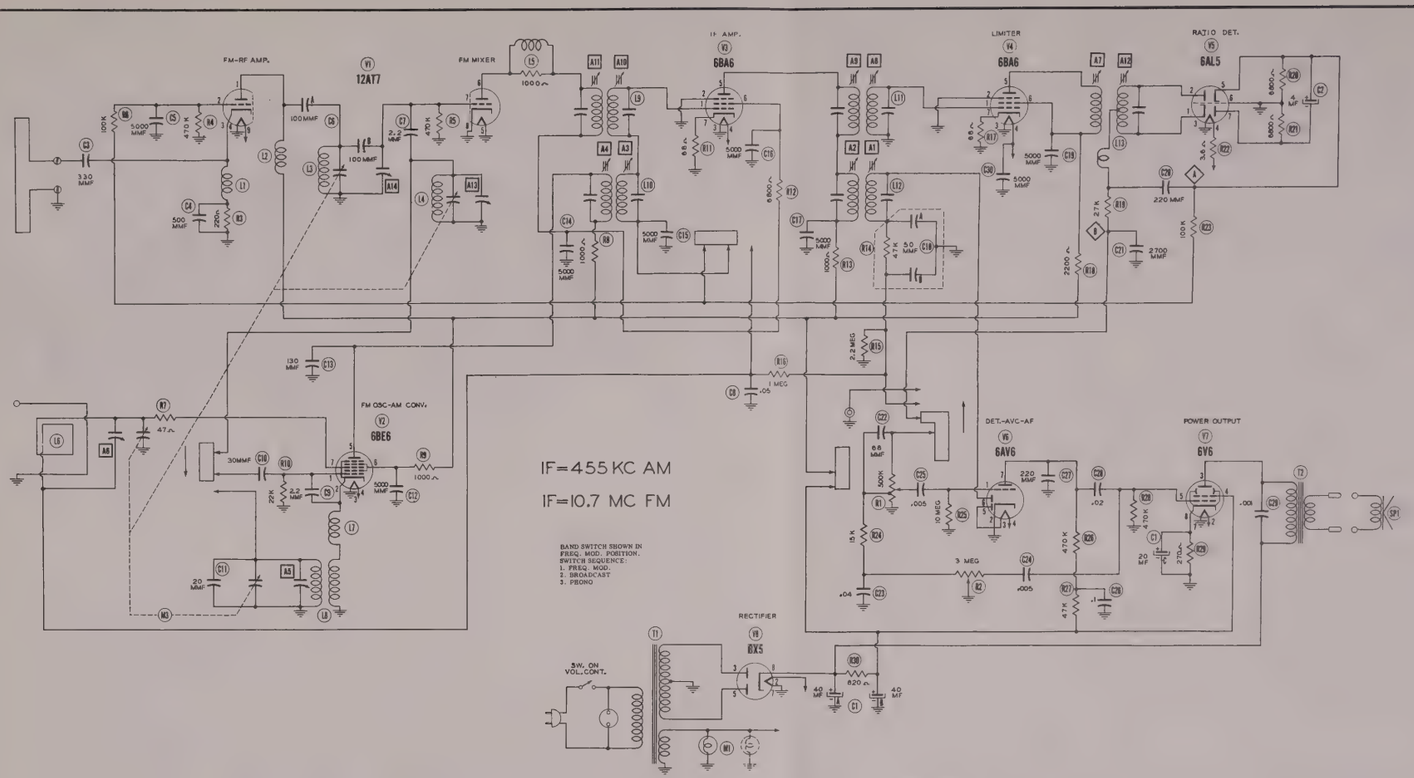

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
† V1	12AT7	125VDC	-.1VDC	5VDC	0V.	0V.	125VDC	-1.7VDC	0V.	6.3VAC
† V2	6BE6	1-6.6VDC	0V.	0V.	6.3VAC	130VDC	115VDC	-1.2VDC		
V2	6BE6	1-5.2VDC	0V.	0V.	6.3VAC	130VDC	122VDC	-.2VDC		
V3	6BA6	-.2VDC	0V.	0V.	6.3VAC	115VDC	87VDC	.8VDC		
V4	6BA6	0V.	0V.	0V.	6.3VAC	89VDC	85VDC	1 VDC		
† V5	6AL5	-.4VDC	0V.	0V.	5.4VAC	5VDC	0V.	-.6VDC		
V6	6AV6	-.9VDC	0V.	0V.	6.3VAC	0V.	-.5VDC	86VDC		
V7	6V6GT	0V.	6.3VAC	350VDC	315VDC	0V.	0V.	5.2VDC		
V8	6X5GT	0V.	0V.	387VAC	0V.	387VAC	0V.	6.3VAC	370VDC	

† TAKEN WITH VACUUM TUBE VOLTMETER.
† TAKEN IN "FM" POSITION.

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
† V1	12AT7	10000	150KΩ	220Ω	0Ω	0Ω	11.5KΩ	470KΩ	0Ω	2Ω
† V2	6BE6	22KΩ	3Ω	0Ω	3Ω	11.5KΩ	11.5KΩ	3 Meg.		
† V2	6BE6	32KΩ	3Ω	0Ω	3Ω	11.5KΩ	11.5KΩ	1.2 Meg.		
V3	6BA6	1.3 Meg.	2Ω	0Ω	2Ω	11.5KΩ	11.5KΩ	68Ω		
† V4	6BA6	.8Ω	0Ω	0Ω	2Ω	12KΩ	12KΩ	68Ω		
† V5	6AL5	400KΩ	400KΩ	0Ω	3Ω	6.8KΩ	0Ω	6.8KΩ		
V6	6AV6	10 Meg.	2Ω	0Ω	2Ω	0Ω	400KΩ	1470KΩ		
V7	6V6GT	Inf.	3Ω	1440Ω	1800Ω	470KΩ	Inf.	0Ω	220Ω	
V8	6X5GT	Inf.	0Ω	1200	Inf.	1600	Inf.	3Ω	300KΩ	

† MEASURED FROM PIN 8 OF V8.

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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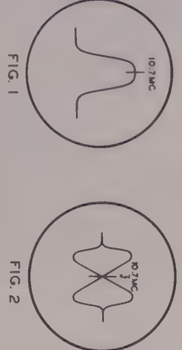


FIG. 1

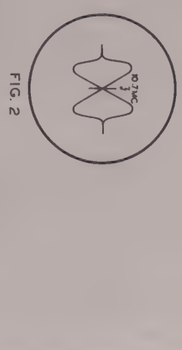


FIG. 2

AM ALIGNMENT

To set pointer turn tuning and fully closed and set pointer to last reference mark at low frequency end of dial.

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Loop should be maintained in same relative position to chassis as when receiver is in cabinet. The signal generator should be connected to the receiver with a shielded cable as close to the chassis as possible. Use an insulated alignment screwdriver for adjusting output coupling. Use the lowest signal generator output that will give a satisfactory output reading.

	1.	2.	3.	4.	5.	6.	7.	8.
DUMMY ANTENNA	1MFD	1MFD		250OHM&F	"	"	200Ω carbon res.	"
SIGNAL GENERATOR COUPLING	High side to pin 7 (Grid) of 6BA6 (V2). Low side to chassis.	"	Loop	High side to pin 1 (Grid) of 12AT7 (V1). Low side to chassis.	"	High side to pin 7 (Grid) of 12AT7 (V1). Low side to chassis.	High side thru 200Ω 1/2W 5% resistor to FM antenna terminal (Remove dipole antenna)	"
SIGNAL GENERATOR FREQUENCY	455KC (400 ~ Mod.)	1620KC	1620KC	"	"	"	"	"
BAND SWITCH POS.	A.M. (center position)	"	"	"	"	"	FM (CW)	"
RADIO SETTING	Tuning gang fully open	"	Tune for max. output	"	"	"	"	Tune for max. deflection.
OUTPUT METER	Across voice coil	"	"	"	"	"	"	"
ADJUST	A5	A6	"	A11	A10, A11	A9, A10	A13	A14
REMARKS	Adjust for maximum output.	"	Position loop of several turns of wire and rotate signal into receiver for adjust for maximum output.	Disconnect stabilizer cap. C4 and symmetry as per figure 1.	Disconnect stabilizer cap. C4 and symmetry as per figure 1.	Adjust for maximum deflection.	Adjust for maximum deflection.	Adjust for maximum deflection.

FM IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

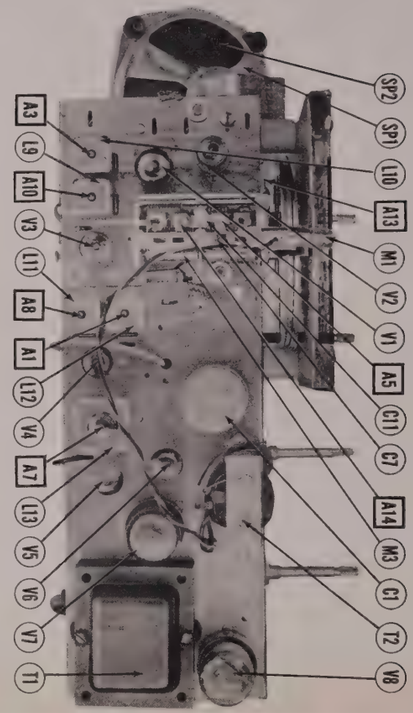
	1.	2.	3.	4.	5.	6.	7.	8.
DUMMY ANTENNA		Loop		250OHM&F	"	"	"	"
SIGNAL GENERATOR COUPLING		High side to pin 1 (Grid) of 6BA6 (V2). Low side to chassis.		High side to pin 1 (Grid) of 12AT7 (V1). Low side to chassis.	High side to pin 7 (Grid) of 12AT7 (V1). Low side to chassis.	High side to pin 7 (Grid) of 6BA6 (V2). Low side to chassis.	"	"
SIGNAL GENERATOR FREQUENCY		1620KC		"	"	"	"	"
BAND SWITCH POS.		"		"	"	"	"	"
RADIO SETTING		Tune for max. output		"	"	"	"	"
VTVM CONNECT		"		Vert. Amp. to Pointer ⊕ Low side to chassis.	Vert. Amp. to Pointer ⊕ Low side to chassis.	DC Probe to Pointer ⊕ Common ⊖ chassis.	DC Probe to Pointer ⊕ Common ⊖ chassis.	DC Probe to Pointer ⊕ Common ⊖ chassis.
ADJUST		A5		A7, A8	A9, A10	A11, A12	A13	A14
REMARKS		Position loop as in AM alignment. Adjust for maximum output.		Disconnect stabilizer cap. C4 and symmetry as per figure 1.	Reconnect capacitor C4. Adjust for best symmetry and minimum amplitude at crossover lines.	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.	Adjust for maximum deflection.	Adjust for maximum deflection.

FM RF ALIGNMENT

Use frequency modulated signal with 60 ~ modulation and 150KC sweep. Use 180 ~ sawtooth voltage in scope for horizontal deflection.

	1.	2.	3.	4.	5.	6.	7.	8.
DUMMY ANTENNA				250OHM&F	"	"	"	"
SIGNAL GENERATOR COUPLING				High side to pin 1 (Grid) of 6BA6 (V2). Low side to chassis.	High side to pin 7 (Grid) of 6BA6 (V2). Low side to chassis.		High side thru 300Ω 1/2W 5% resistor to FM antenna terminals.	"
SIGNAL GENERATOR FREQUENCY				10.7MC (Sweep)	"	"	"	"
BAND SWITCH POS.				FM (CW)	"	"	"	"
RADIO SETTING				Tuning gang fully open	"	"	"	"
SCOPE CONNECT				Vert. Amp. to Pointer ⊕ Low side to chassis.	"			
ADJUST				A7, A8	A9	A10, A11		
REMARKS				Disconnect stabilizer cap. C4 and symmetry as per figure 1.	Reconnect capacitor C4. Adjust for best symmetry and minimum amplitude at crossover lines. SLIGHTLY retouch A7 for maximum amplitude and straightness at crossover lines			

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: TRUETONE PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
V1	FM RF Amp. -FM Mixer	12AT7	12AT7	9A	
V2	FM Osc. -AM Converter	6BE6	6BE6	7CH	
V3	IF Amp.	6BA6	6BA6	7BK	
V4	Limiter	6BA6	6BA6	7BK	
V5	Ratio Det.	6AL5	6AL5	6BT	
V6	DET.-AVC-AF	6AV6	6AV6	7BT	
V7	Power Output	6V6GT	6V6GT	7AC	
V8	Rectifier	6X5GT	6X5GT	6S	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: TRUETONE PART No.	AEROVOX PART No.	CENTRALAB PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	40	300	45X360	AF8H84G4A *			EL-432 *	▲ Filter
B	40	150						■ Filter
C	20	25						▲ Output Plate Bypass
C2	4	100	45X361	PRS150/4			UT-41	Stabilizing Cap.
C3	330	500	47X470	1468-00035	D6-331	GP2K-330	1FM-335	RF Coupling
C4	500		47X508	GP500M	D6-501	GP2K-500	1FM-35	FM RF Cathode Bypass
C5	5000		47X507	BPD-5	D6-502	811-005	29C1	AVC Filter
C6A	100		76X4	GP100M	D6-101	GP1K-100	1FM-31	RF Coupling
B	100			GP100M	D6-101	GP1K-100	1FM-31	RF Coupling
C7	2.2		47X557		D2-2.2			Osc. Coupling
C8	.05	200	B66503	P288-05			TM-15	AVC Filter
C9	2.2		47X557		D2-2.2			Osc. Feedback
C10	30		47X558	SI30JN750	DN-30	N750L-30	MS-43	Osc. Grid Cap.
C11	20		47X516	CI20KN600		N600K-20	MS-42	Fixed Trimmer
C12	5000		47X507	BPD-5	D6-502	811-005	29C1	Osc. Anode Bypass
C13	130		47X559	SI130KN750	DN-130	N750L-130		Fixed Trimmer
C14	5000		47X507	BPD-5	D6-502	811-005	29C1	Conv. Plate Decoupling
C15	5000		47X507	BPD-5	D6-502	811-005	29C1	AVC Filter
C16	5000		47X507	BPD-5	D6-502	811-005	29C1	1st IF Screen Bypass
C17	5000		47X507	BPD-5	D6-502	811-005	29C1	1st IF Decoupling
C18A	50		47X112	GP50M	D6-500	GP1K-50	1FM-45	Diode RF Filter
B	50			GP50M	D6-500	GP1K-50	1FM-45	Diode RF Filter
C19	5000		47X507	BPD-5	D6-502	811-005	29C1	2nd IF Decoupling
C20	220	500	47X468	1468-00025	D6-221	GP2K-220	1FM-325	Diode Load Cap.
C21	2700	500	47X492	1467-0025	D6-272	GP2M-0027	1FM-225	De-emphasis
C22	68	500	47X471	1468-000075	D6-680	GP1K-68	1FM-475	Tone Compensation
C23	.04	300	B66403	P488-04			TM-14	Tone Compensation
C24	.005	600	B66402	P688-005	D6-502	811-005	TM-25	Tone Compensation
C25	.005	600	D66502	P688-005	D6-502	811-005	TM-25	Audio Coupling
C26	.1	400	D66104	P488-1			TM-1	AF Amp. Plate Decoupling
C27	220	500	47X468	1468-00025	D6-221	GP2K-220	1FM-325	AF Amp. Plate Bypass
C28	.02	400	D66203	P488-02			TM-12	Audio Coupling
C29	.001	800	R66102	P1068-001			MB-21	Output Plate Bypass
C30	5000		47X507	BPD-5	D6-502	811-005	29C1	2nd IF Filament Bypass

* Omit one section.

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: TRUETONE PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	INSTALLATION NOTES
R1A	500KΩ	½	36X372	Q13-133X	AT-78	BT8K-66-S	Volume control tapped at 100KΩ
B	Shaft		Not Req.	Not Req.	KSS-3	Not Req.	Attach to R1A per instructions
C	Switch		Not Req.	76-1	SW-A	Not Req.	Attach to R1A per instructions
R2A	3 Meg.	½	40X285	Q13-140	AM-67-Z	AN-85	Tone control
B	Shaft		Not Req.	Not Req.	KSS-3	AK-4	Attach to R2A per instructions

SET 67
FOLDER 18

PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: TRUETONE PART No.	IRC PART No.	IDENTIFICATION CODES
R3	220Ω	½	B84221		FM RF Cathode
R4	470KΩ	½	B85474	BTS-470K	FM RF Grid
R5	470KΩ	½	B85474	BTS-470K	FM Mixer Grid
R6	100KΩ	½	B85104	BTS-100K	AVC Network
R7	47Ω	½	B85470		Parasitic Supp.
R8	1000Ω	½	B85102	BTS-1000	Conv. Plate Decoupling
R9	1000Ω	½	B85102	BTS-1000	Osc. Anode Decoupling
R10	22KΩ	½	B85223	BTS-23K	Osc. Grid
R11	68Ω	½	B84680		1st IF Cathode
R12	6800Ω	½	B84682	BTS-6800	1st IF Screen
R13	1000Ω	½	B85102	BTS-1000	1st IF Plate Decoupling
R14	47KΩ	½	B85473	BTS-47K	Diode Filter
R15	2.2 Meg.	½	B85225	BTS-2.2 Meg.	Diode Load
R16	1 Meg.	½	B85105	BTS-1 Meg.	AVC Network
R17	68Ω	½	B84680		FM 2nd IF Cathode
R18	2200Ω	½	B85222	BTS-2200	FM 2nd IF Decoupling
R19	27KΩ	½	B85273	BTS-27K	De-emphasis
R20	6800Ω	½	B84682	BTS-6800	Ratio Det. Diode Load
R21	6800Ω	½	B84682	BTS-6800	Ratio Det. Diode Load
R22	3.6Ω	½	43X233		Ratio Det. Filament-Wire Wound
R23	100KΩ	½	B85104	BTS-100K	AVC Network
R24	15KΩ	½	B85153	BTS-15K	Tone Compensation
R25	10 Meg.	½	B85106	BTS-10 Meg.	AF Amp. Grid
R26	470KΩ	½	B85474	BTS-470K	AF Amp. Plate
R27	47KΩ	½	B85473	BTS-47K	AF Amp. Plate Decoupling
R28	470KΩ	½	B85474	BTS-470K	Output Grid
R29	270Ω	½	B84271	BW-½-270	Output Cathode
R30	820Ω	2	D84821	BW-2-820	Filter

TRANSFORMER (POWER)

ITEM No.	RATING: PRI.	RATING: SEC. 1	RATING: SEC. 2	RATING: SEC. 3	REPLACEMENT DATA: TRUETONE PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.
T1	117VAC	340VCT @ .058ADC	6.3VAC @ 2.7A		53X291	P-6119 *	P-3047 *	PR-70B *

* Add series resitor to reduce plate voltage.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: TRUETONE PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	INSTALLATION NOTES
T2	5.3KΩ	3.6Ω	430Ω	.6Ω	51X144	A-3849	A-2930 ¶	RO-9 ¶	¶ Drill one new mounting hole.

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA: TRUETONE PART No.	JENSEN PART No.	QUAM PART No.	INSTALLATION NOTES
SP1	FIELD	V. C. IMP.	12A494	ST-603 MOD. P525-V	52A1	
	PM	3.6Ω				
	CONE DIA.	V. C. DIA.				
SP2	5"	5/16"				

PARTS LIST AND DESCRIPTIONS (Continued)

R F COILS

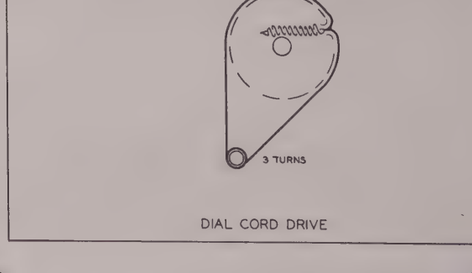
ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA: TRUETONE PART No.	REPLACEMENT DATA: MEISSNER PART No.	
L1	FM RF Chk.	.2Ω		35A9		Insulated
L2	FM RF Chk.	3.5Ω		35A8		Insulated
L3	FM Ant.	0Ω		9A2066		
L4	FM Osc.	0Ω		9A2067		
L5	Para. Supp.	.1Ω		9A2068		
L6	Loop Ant.	0Ω	1Ω	9A2097		
L7	AM RF Chk.	1.8Ω		35A5		Insulated
L8	AM Osc.	.5Ω	5.2Ω	9A2065	14-1073	
L9	1st FM IF	1Ω	1Ω	9A2060		
L10	1st AM IF	13Ω	15Ω	9A2062	16-6678	
L11	2nd FM IF	1Ω	1Ω	9A2061		
L12	2nd AM IF	13Ω	14.8Ω	9A2063	16-6678	
L13	Ratio Det. Trans.	1.2Ω	.1Ω	9A2064		

DIAL LIGHTS

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA: TRUETONE PART No.		NOTES
M1	Bayonet	6-8	.15	Brown	7A103		Type #47

MISCELLANEOUS

ITEM No.	PART NAME	TRUETONE PART No.	NOTES
M2	Switch	2A393	Band
M3	2 Gang Var. Cap.	14A211	(26-530MMF, 33-277MMF)
	Dial Glass	58X731	
	Dial Pointer	15X256	
	Knob	10A734	



PHOTOFACT* Folder

WESTINGHOUSE MODEL
H-605T12 (CH. V-2150-101)

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H-605T12 (CH. V-2150-101)

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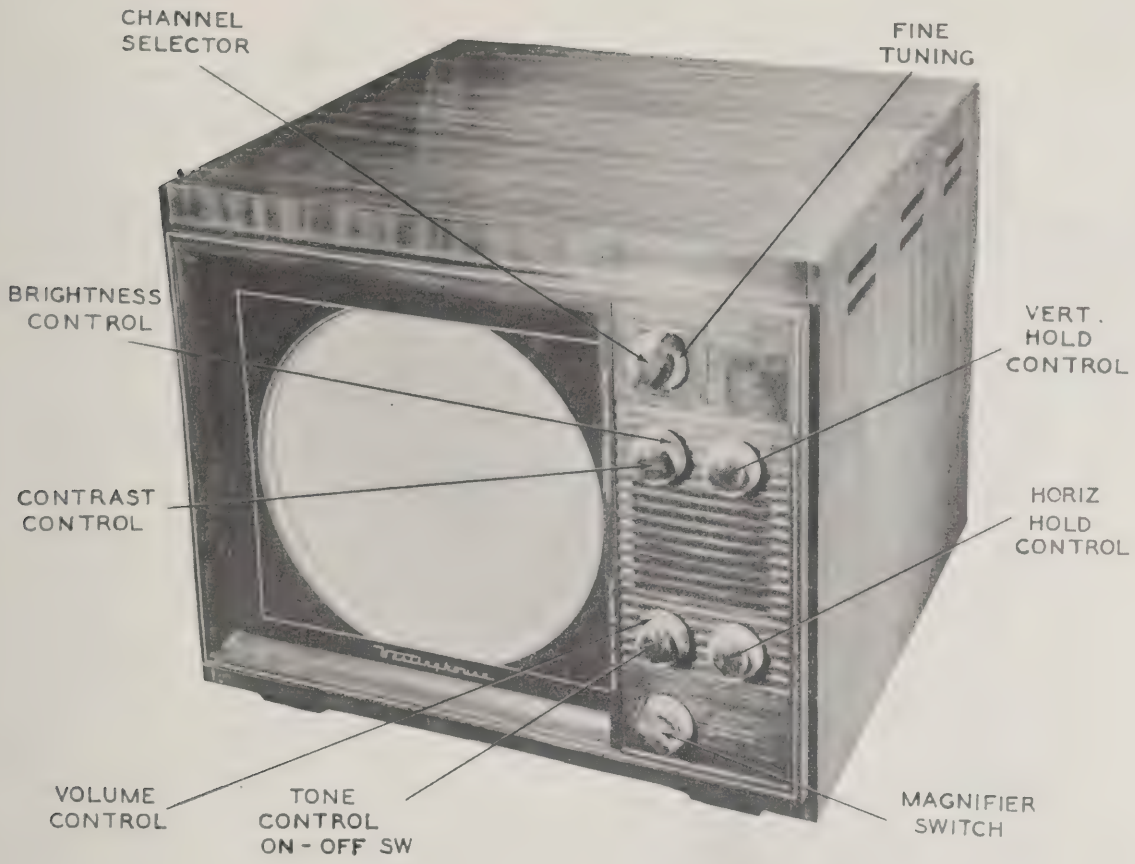
WESTINGHOUSE
MODEL H-605T12 (Ch. V-2150-101)



WESTINGHOUSE
MODEL H-605T12 (Ch. V-2150-101)

TRADE NAME	Westinghouse, Model H-605T12 (Ch. V-2150-101)
MANUFACTURER	Westinghouse Electric Corp., Receiver Div., Sunbury, Pennsylvania
TYPE SET	Television Receiver
TUBES	Twenty Nine
POWER SUPPLY	110-120 Volts AC-60 Cycle — RATING 2.4 Amp. at 117 Volts AC
TUNING RANGE—	Channels 2 thru 13

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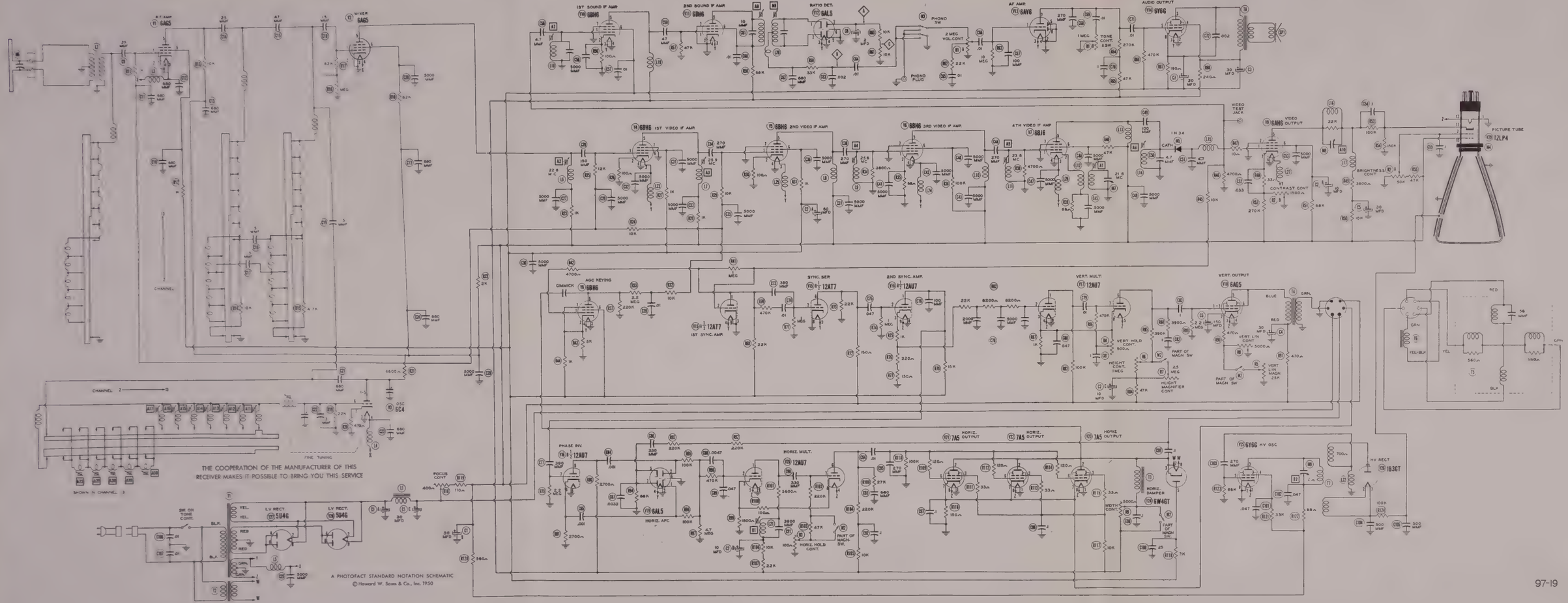
R.F. AMP 6AG5
MIXER 6AG5
1ST SOUND I.F. AMP 6BH6
2ND SOUND I.F. AMP 6BH6
RATIO DET. 6AL5
PHONO SW
PHONO PLUG
2 MEG VOL. CONT
A.F. AMP 6AV6
TONE CONT 4.5M
AUDIO OUTPUT 6Y6G
1ST VIDEO I.F. AMP 6BH6
2ND VIDEO I.F. AMP 6BH6
3RD VIDEO I.F. AMP 6BH6
4TH VIDEO I.F. AMP 6BJ6
1N34
VIDEO TEST JACK
VIDEO OUTPUT 6AH6
CONTRAST CONT 1500Ω
BRIGHTNESS CONT
PICTURE TUBE 12LP4
AGC KEYING
GIMMICK 6BH6
1ST SYNC. AMP 1/2 12AT7
SYNC. SEP 1/2 12AT7
2ND SYNC. AMP 1/2 12AU7
VERT. MULT. 12AU7
HEIGHT CONT. 1MEG
VERT. HOLD CONT. 500Ω
PART OF MAGN SW
HEIGHT MAGNIFIER CONT
VERT. OUTPUT 6AQ5
VERT. LIN CONT
VERT. LIN MAGN .25K
PHASE INV. 1/2 12AU7
HORIZ. APC 6AL5
HORIZ. MULT. 12AU7
HORIZ. HOLD CONT.
HORIZ. OUTPUT 7A5
HORIZ. OUTPUT 7A5
HORIZ. OUTPUT 7A5
WIDTH CONT.
HORIZ. DAMPER 6W4GT
HV OSC 6Y6G
HV RECT. 1B3GT
OSC 6C4
FINE TUNING
CHANNEL
SW ON TONE CONT.
L.V. RECT. 5U4G
L.V. RECT. 5U4G
FOCUS CONT.
THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE
SHOWN IN CHANNEL 3
A PHOTOFACT STANDARD NOTATION SCHEMATIC
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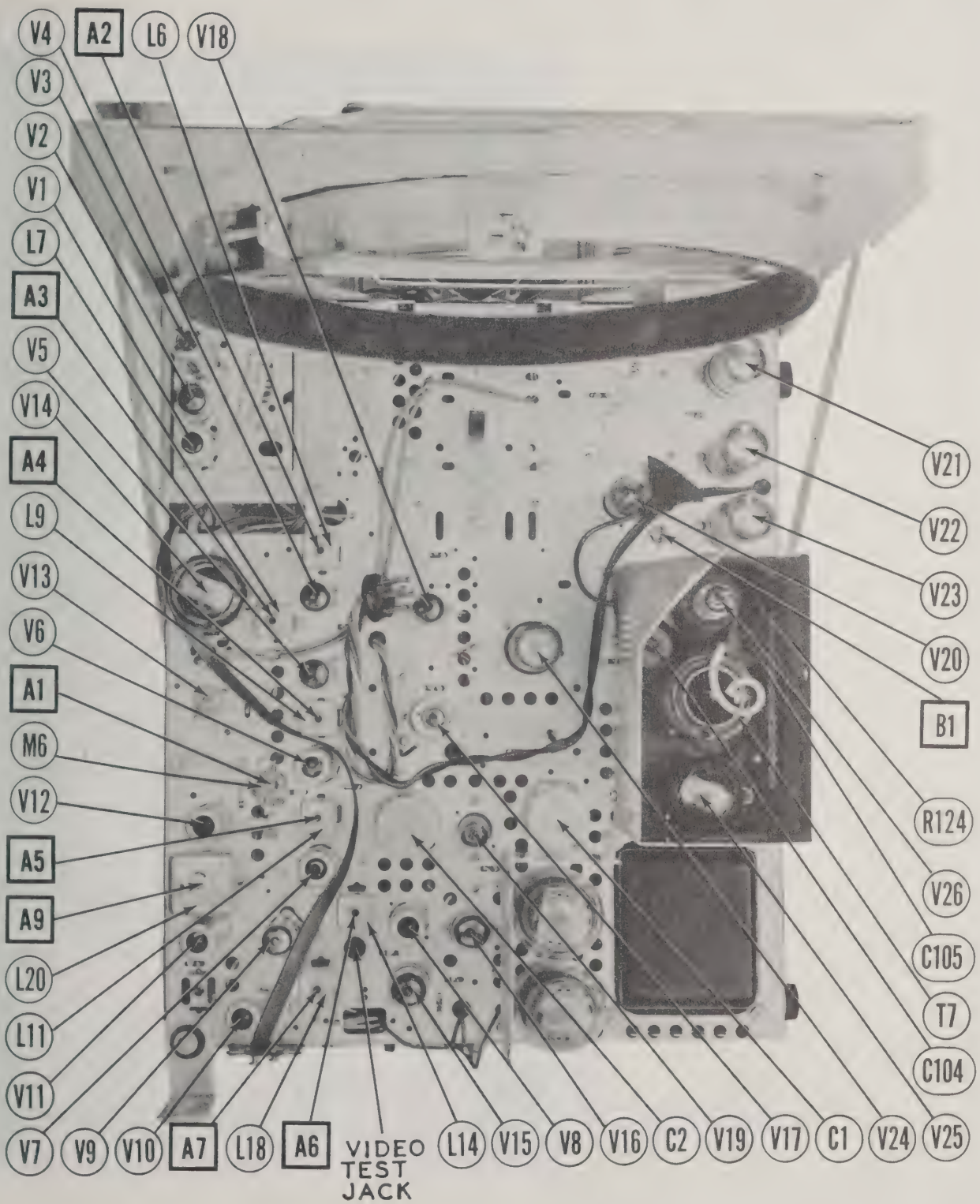
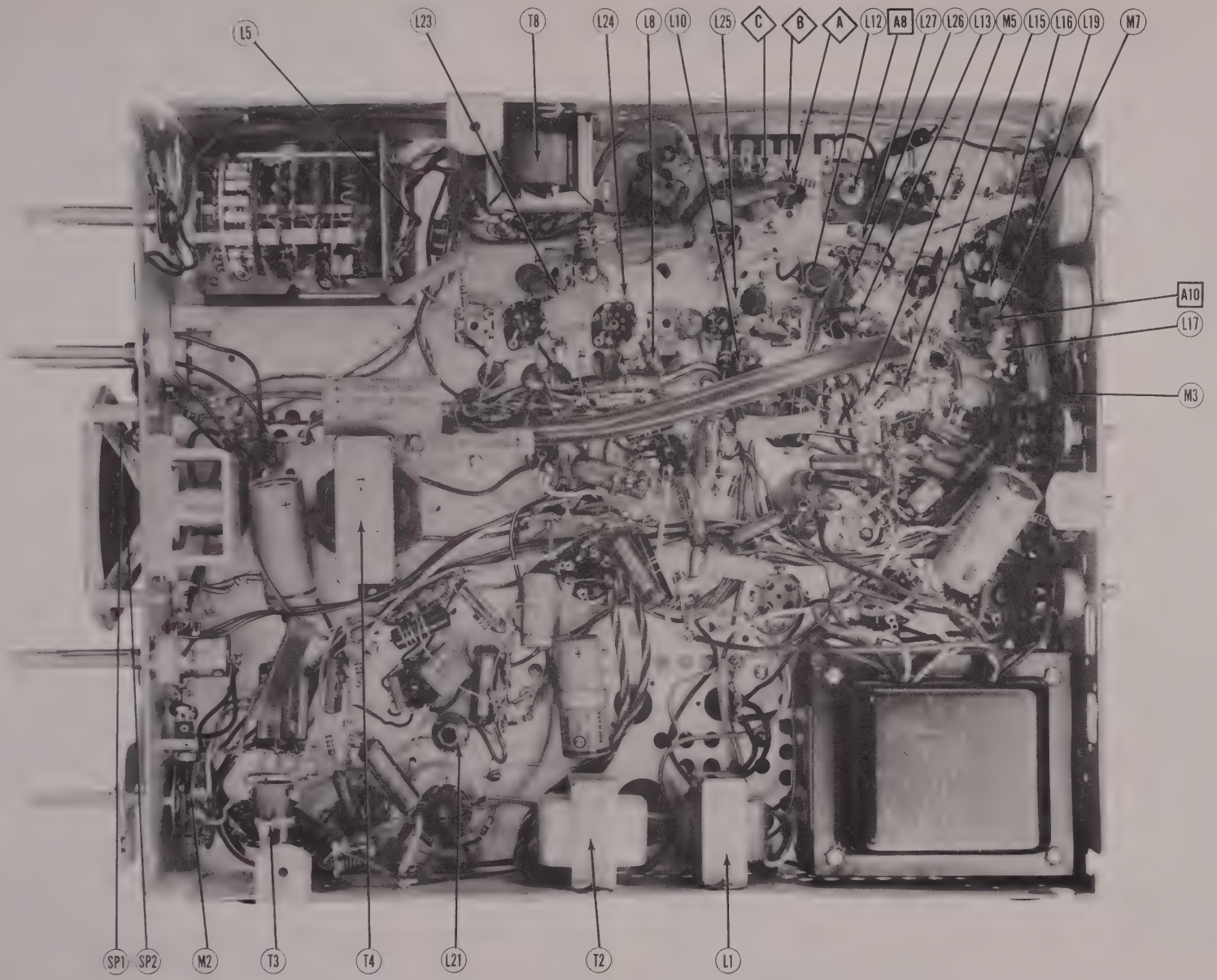
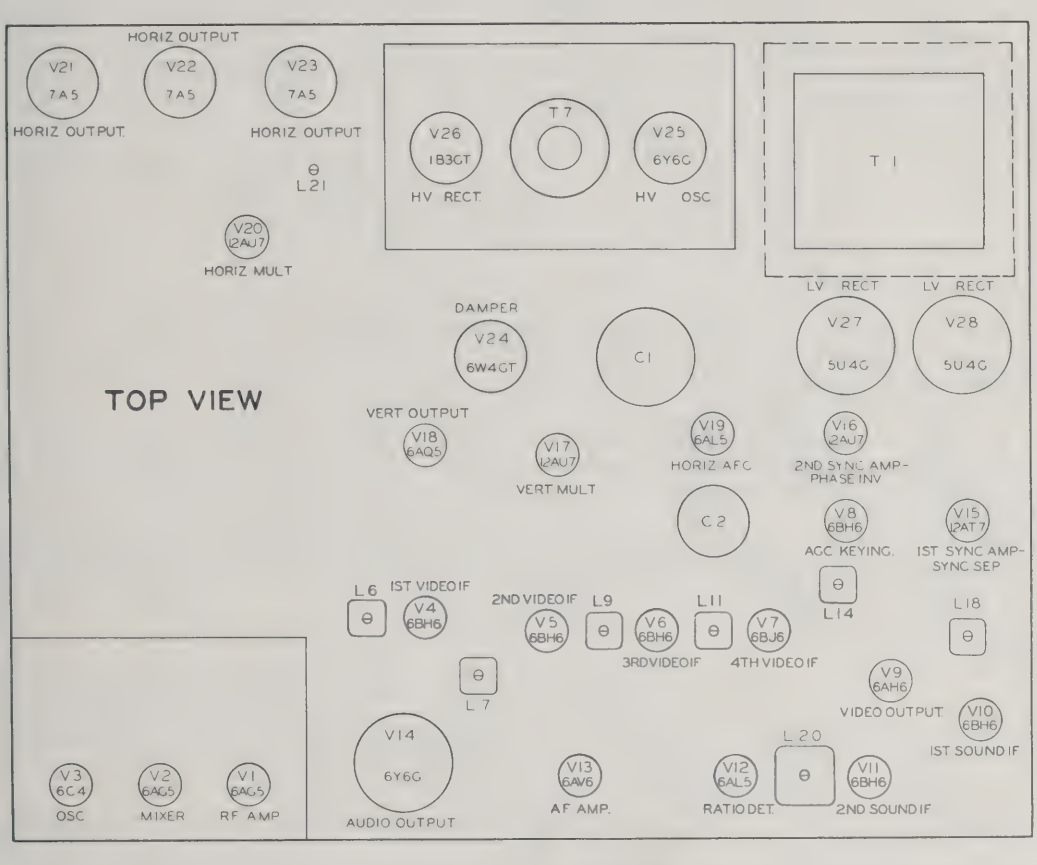
97-19

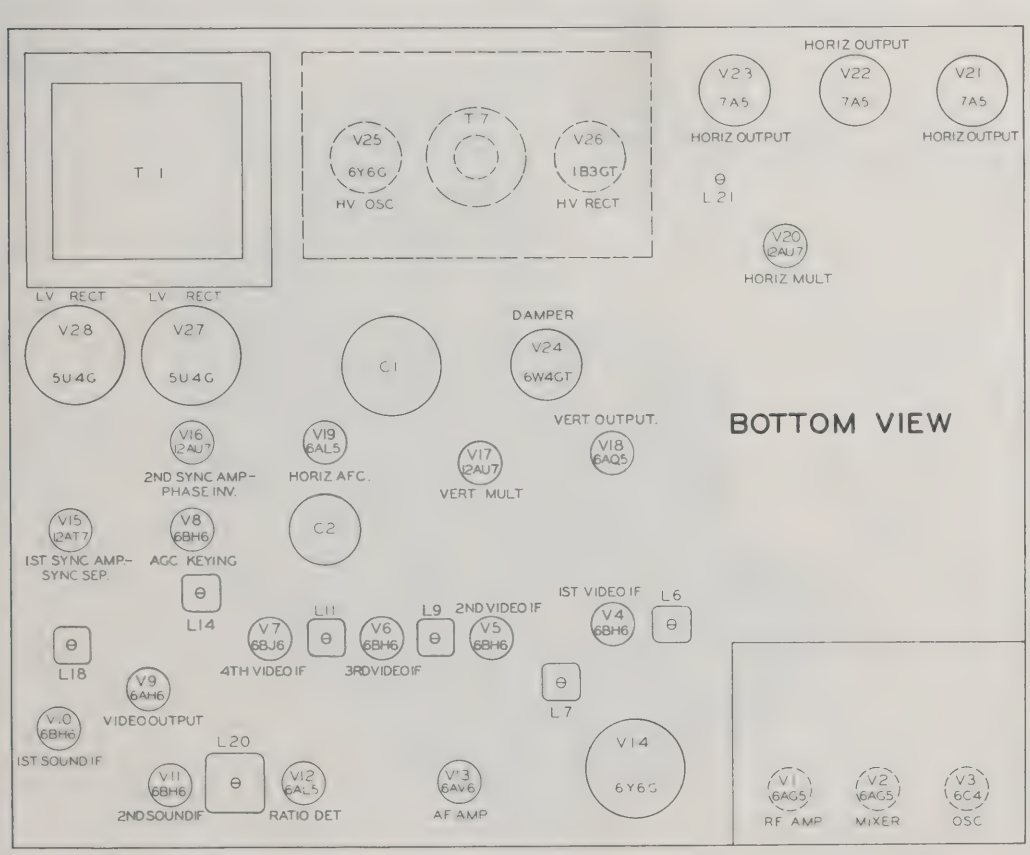


CHASSIS TOP VIEW



CHASSIS BOTTOM VIEW-TRANS., INDUCTOR AND ALIGNMENT IDENTIFICATION





TUBE PLACEMENT CHART

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

The high voltage shock hazard may be eliminated by removing the high voltage oscillator tube (V25) from its socket.

VIDEO IF ALIGNMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
1.	Direct	High side to ungrounded tube shield floating over mixer tube (V2). Low side to chassis.	21.6MC (Unmod.)	3	DC Probe to "video test jack". Common to chassis.	A1	Adjust for MINIMUM deflection.
2.	Direct	"	22.6MC	"	"	A2	Adjust for maximum deflection. Attenuate signal generator to maintain 2 volt reading.
3.	Direct	"	25.9MC	"	"	A3	"
4.	Direct	"	25.6MC	"	"	A4	"
5.	Direct	"	23.8MC	"	"	A5	"
6.	Direct	"	23MC	"	"	A6	"

OVERALL VIDEO IF RESPONSE CHECK

Remove the local oscillator tube (V3) from its socket to prevent erroneous indications.
Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.
Connect a 200KΩ resistor in series with the oscilloscope vertical input lead, and a 500MMF capacitor across the vertical input terminal and low side terminal at the oscilloscope end of the input cable.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
7.	Direct	High side to ungrounded tube shield floating over mixer tube (V2). Low side to chassis.	25MC (10MC SWP)	21.6MC **22.5MC** 23.5MC 25.3MC 26.1MC	Any	Vert. Amp. to "video test jack". Low side to chassis.		Check for response curve similar to figure 1. If necessary retouch A1 thru A6 for optimum response.

SOUND IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
8.	.001MFD	High side to "video test jack". Low side to chassis.	4.5MC (Unmod.)	Any	DC Probe to Point (A). Common to chassis.	A7, A8	Adjust for maximum deflection.
9.	.001MFD	"	"	"	DC Probe to Point (B). Common to Point (C).	A9	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

SOUND IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60 ∿ modulation and 450KC sweep. Use 120 ∿ sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
8.	.001MFD	High side to "video test jack". Low side to chassis.	4.5MC (450KC Sweep)	4.5MC	Any	Vert. Amp. to Point (A). Low side to chassis.	A7, A8	Disconnect stabilizer cap C8. Adjust for maximum amplitude and symmetry as per figure 2. Reconnect C8.
9.	.001MFD	"	"	"	"	Vert. Amp. to Point (B) Low side to chassis.	A9	Adjust A9 so 4.5MC occurs at center of crossover lines as per figure 3. Slightly retouch A8 for maximum amplitude and straightness of crossover lines.

4.5MC TRAP ADJUSTMENT

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
10.	.001MFD	High side to "video test jack". Low side to chassis.	Not used	4.5MC (400 ∿ Mod.)	Any	Vert. Amp. thru detector probe (figure 4) to Point (D). Low side to chassis.	A10	Adjust for minimum 400 ∿ indication on scope.

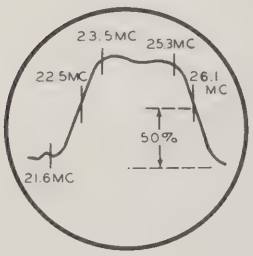


FIG.1

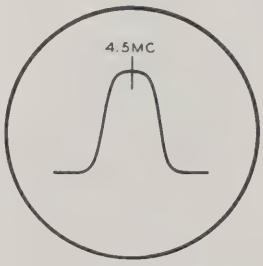


FIG.2

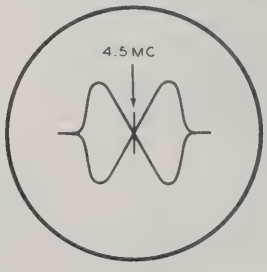


FIG.3

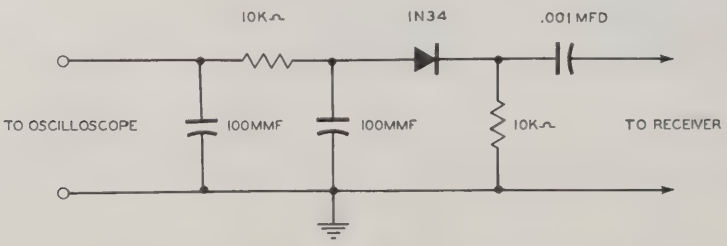


FIG.4

ALIGNMENT INSTRUCTIONS (CONT.)

OSCILLATOR ALIGNMENT

Replace the local oscillator tube in its socket.
Connect the synchronized sweep voltage from the signal generator to the horizonal input of the oscilloscope for horizontal deflection.
The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.
Set the fine tuning control to the mid-position of its range.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
11.	Two 120Ω carbon res.	Across antenna terminals with 120Ω in each lead.	213MC (10MC SWP)	211.25MC 215.75MC	13	Vert. Amp. to "video test jack". Low side to chassis.	A11	Adjust to place sound marker as shown in figure 5. The video marker should be at 50%.
			207MC (10MC SWP)	205.25MC 209.75MC	12		A12	
			201MC (10MC SWP)	199.25MC 203.75MC	11		A13	
			195MC (10MC SWP)	193.25MC 197.75MC	10		A14	
			189MC (10MC SWP)	187.25MC 191.75MC	9		A15	
			183MC (10MC SWP)	181.25MC 185.75MC	8		A16	
			177MC (10MC SWP)	175.25MC 179.75MC	7		A17	
			85MC (10MC SWP)	83.25MC 87.75MC	6		A18	
			79MC (10MC SWP)	77.25MC 81.75MC	5		A19	
			69MC (10MC SWP)	67.25MC 71.75MC	4		A20	
			63MC (10MC SWP)	61.25MC 65.75MC	3		A21	
			57MC (10MC SWP)	55.25MC 59.75MC	2		A22	

THE RF AND MIXER ADJUSTMENTS IN THIS RECEIVER HAVE BEEN PRE-SET AT THE FACTORY AND ARE VERY STABLE. THEY SHOULD NOT REQUIRE ALIGNMENT IN THE FIELD.

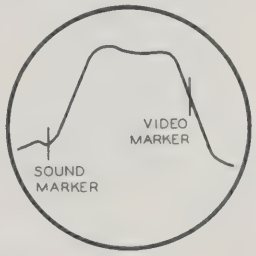
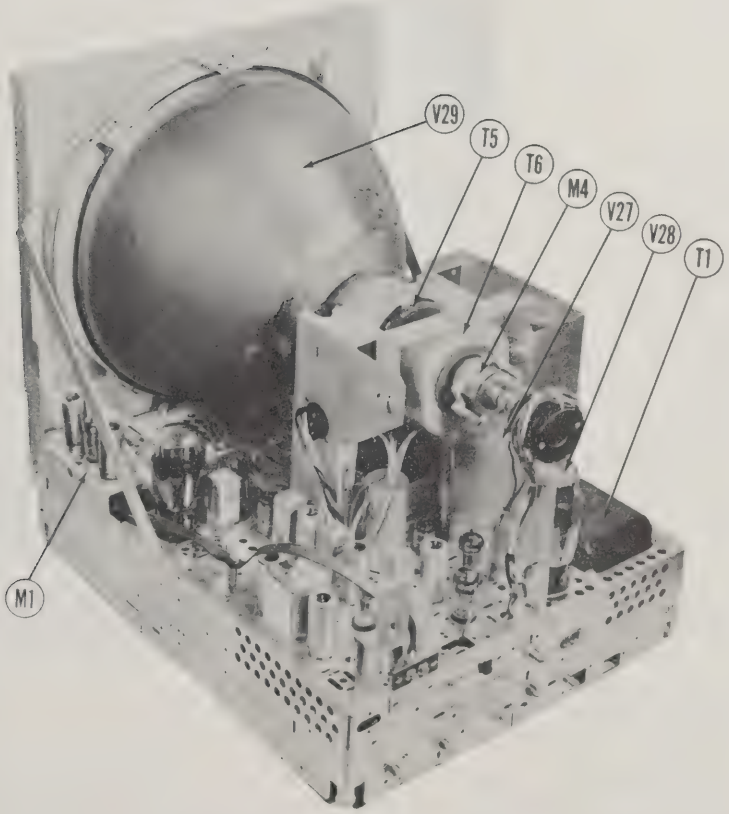


FIG.5



CHASSIS-TOP VIEW

VOLTAGE AND RESISTANCE MEASUREMENTS

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6AG5	-.4VDC	0V.	6.3VAC	0V.	175VDC	125VDC	0V.		
V 2	6AG5	0V.	0V.	0V.	6.3VAC	330VDC	285VDC	0V.		
V 3	6C4	210VDC	0V.	0V.	6.3VAC	210VDC	§-5.5VDC	5VDC		
V 4	6BH6	-1.6VDC	.6VDC	6.3VAC	0V.	330VDC	125VDC	0V.		
V 5	6BH6	-.5VDC	.6VDC	6.3VAC	0V.	330VDC	125VDC	0V.		
V 6	6BH6	0V.	.5VDC	6.3VAC	0V.	330VDC	115VDC	0V.		
V 7	6BJ6	0V.	1 VDC	6.3VAC	0V.	330VDC	130VDC	0V.		
V 8	6BH6	55VDC	105VDC	0V.	6.3VAC	0V.	125VDC	105VDC		
V 9	6AH6	-.4VDC	0V.	6.3VAC	0V.	280VDC	285VDC	5.6VDC		
V 10	6BH6	0V.	1.2VDC	6.3VAC	0V.	330VDC	125VDC	0V.		
V 11	6BH6	-.4VDC	0V.	6.3VAC	0V.	65VDC	65VDC	0V.		
V 12	6AL5	-4.7VDC	-1VDC	6.3VAC	0V.	0V.	0V.	-5.8VDC		
V 13	6AV6	-.4VDC	0V.	6.3VAC	0V.	0V.	0V.	90VDC		
V 14	6Y6G	#0V.	0V.	#245VDC	#270VDC	#70VDC	#0V.	6.3VAC	#100VDC	
V 15	12AT7	55VDC	-.1VDC	0V.	6.3VAC	6.3VAC	37VDC	-.9VDC	0V.	0V.
V 16	12AU7	90VDC	0V.	3.4VDC	0V.	0V.	320VDC	0V.	14VDC	6.3VAC
V 17	12AU7	55VDC	.8VDC	2.6VDC	6.3VAC	6.3VAC	95VDC	-26VDC	2.6VDC	0V.
V 18	6AQ5	-2.8VDC	11.5VDC 38VDC	6.3VAC	0V.	300VDC	300VDC	-2.8VDC		
V 19	6AL5	4.8VDC	-5.9VDC	0V.	6.3VAC	0V.	0V.	0V.		
V 20	12AU7	180VDC	-.2VDC	8.8VDC	6.3VAC	6.3VAC	115VDC	-2.5VDC	8.9VDC	0V.
V 21	7A5	0V.	220VDC	95VDC	95VDC	-2.9VDC	-3VDC	15.5VDC	6.3VAC	
V 22	7A5	0V.	220VDC	95VDC	95VDC	-2.9VDC	-3VDC	15.5VDC	6.3VAC	
V 23	7A5	0V.	220VDC	95VDC	95VDC	-2.9VDC	-3VDC	15.5VDC	6.3VAC	
V 24	6W4GT	0V.	0V.	220VDC	0V.	45VDC	0V.	220VDC	220VDC	
V 25	6Y6G	0V.	0V.	305VDC	95VDC	-41VDC	0V.	6.3VAC	0V.	TOP CAP *
V 26	1B3GT	* DO NOT MEASURE.								
V 27	5U4G	0V.	410VDC	0V.	340VAC	0V.	340VAC	0V.	410VDC	
V 28	5U4G	0V.	410VDC	0V.	340VAC	0V.	340VAC	0V.	410VDC	
V 29	12LP4	0V.	0V.	PIN 10 330VDC	PIN 11 170VDC	PIN 12 6.3VAC				

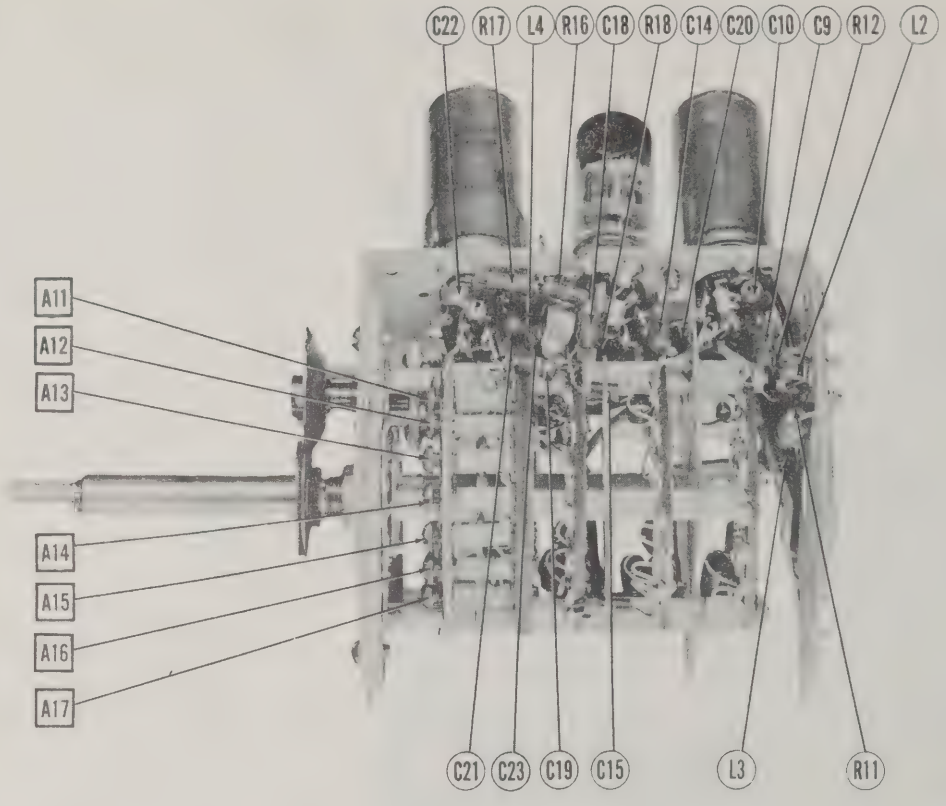
MEASURED FROM PIN 5 OF V24.
* DO NOT MEASURE.
§ TAKEN WITH VACUUM TUBE VOLTMETER.

RESISTANCE READINGS

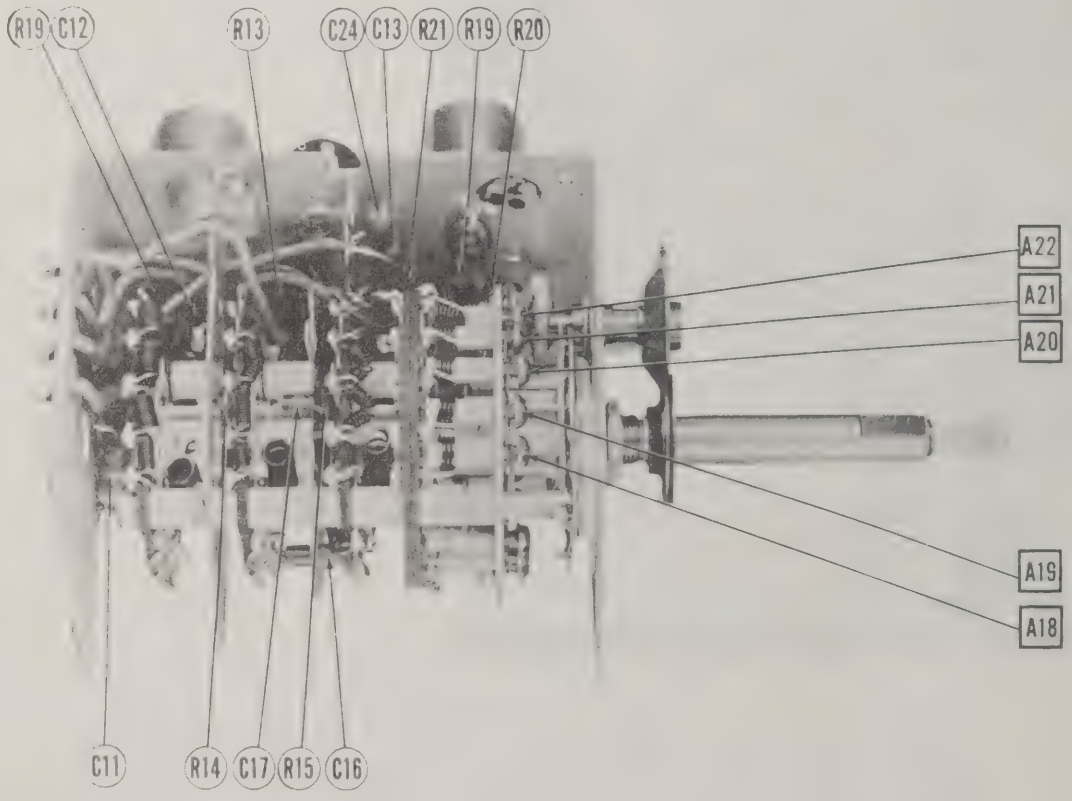
Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6AG5	2.4 Meg.	0Ω	.1Ω	0Ω	†13KΩ	#3KΩ	0Ω		
V 2	6AG5	1 Meg.	0Ω	0Ω	.1Ω	†1.2KΩ	†84KΩ	0Ω		
V 3	6C4	†8KΩ	Inf.	0Ω	.1Ω	†8KΩ	22KΩ	470Ω		
V 4	6BH6	2.4 Meg.	100Ω	.1Ω	0Ω	†1000Ω	#3KΩ	0Ω		
V 5	6BH6	2.4 Meg.	100Ω	.1Ω	0Ω	†110Ω	#3KΩ	0Ω		
V 6	6BH6	.5Ω	68Ω	.1Ω	0Ω	†110Ω	†100KΩ	0Ω		
V 7	6BJ6	.5Ω	68Ω	.1Ω	0Ω	†110Ω	†47KΩ	0Ω		
V 8	6BH6	33KΩ	5KΩ	0Ω	.1Ω	220KΩ	#2KΩ	5KΩ		
V 9	6AH6	210Ω	0Ω	.1Ω	0Ω	†13.7KΩ	†68KΩ	1.5KΩ		
V 10	6BH6	1.9Ω	100Ω	.1Ω	0Ω	†120Ω	#2KΩ	0Ω		
V 11	6BH6	47KΩ	0Ω	.1Ω	0Ω	†68KΩ	†68KΩ	0Ω		
V 12	6AL5	Inf.	Inf.	.1Ω	0Ω	0Ω	0Ω	20KΩ		
V 13	6AV6	10 Meg.	0Ω	.1Ω	0Ω	0Ω	0Ω	†320KΩ		
V 14	6Y6G	Inf.	0Ω	†650Ω	†390Ω	476KΩ	Inf.	.1Ω	#2.2KΩ	
V 15	12AT7	28KΩ	9KΩ	0Ω	.1Ω	.1Ω	22KΩ	1 Meg.	0Ω	0Ω
V 16	12AU7	22KΩ	1 Meg.	1.3KΩ	0Ω	0Ω	†2.5KΩ	2.2 Meg.	2.7KΩ	.1Ω
V 17	12AU7	†110KΩ	38KΩ	1000Ω	.1Ω	.1Ω	†460KΩ	470KΩ	1000Ω	0Ω
V 18	6AQ5	2.2 Meg.	5.5KΩ 470Ω	.1Ω	0Ω	†1.3KΩ	†1.3KΩ	2.2 Meg.		
V 19	6AL5	4.8 Meg.	4.8 Meg.	0Ω	.1Ω	68KΩ	0Ω	68KΩ		
V 20	12AU7	†38KΩ	5.2 Meg.	1.8KΩ	.1Ω	.1Ω	†200KΩ	270KΩ	1.9KΩ	0Ω
V 21	7A5	0Ω	44KΩ	†10KΩ	▲14KΩ	100KΩ	100KΩ	150Ω	.1Ω	
V 22	7A5	0Ω	44KΩ	†10KΩ	▲14KΩ	100KΩ	100KΩ	150Ω	.1Ω	
V 23	7A5	0Ω	44KΩ	†10KΩ	▲14KΩ	100KΩ	100KΩ	150Ω	.1Ω	
V 24	6W4GT	Inf.	Inf.	44KΩ	Inf.	8KΩ	Inf.	44KΩ	44KΩ	
V 25	6Y6G	0Ω	0Ω	†850Ω	†34KΩ	68KΩ	23Ω	.1Ω	0Ω	
V 26	1B3GT	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	TOP CAP 750Ω
V 27	5U4G	0Ω	35KΩ	Inf.	25Ω	Inf.	25Ω	Inf.	35KΩ	
V 28	5U4G	0Ω	35KΩ	Inf.	25Ω	Inf.	25Ω	Inf.	35KΩ	
V 29	12LP4	0Ω	8.5Ω	PIN 10 †150Ω	PIN 11 80KΩ	PIN 12 .1Ω				

FOCUS CONTROL IN COUNTERCLOCKWISE POSITION.
† MEASURED FROM PIN 8 OF V27.
# MEASURED FROM PIN 5 OF V24.
▲ MEASURED FROM PIN 3 OF V24.

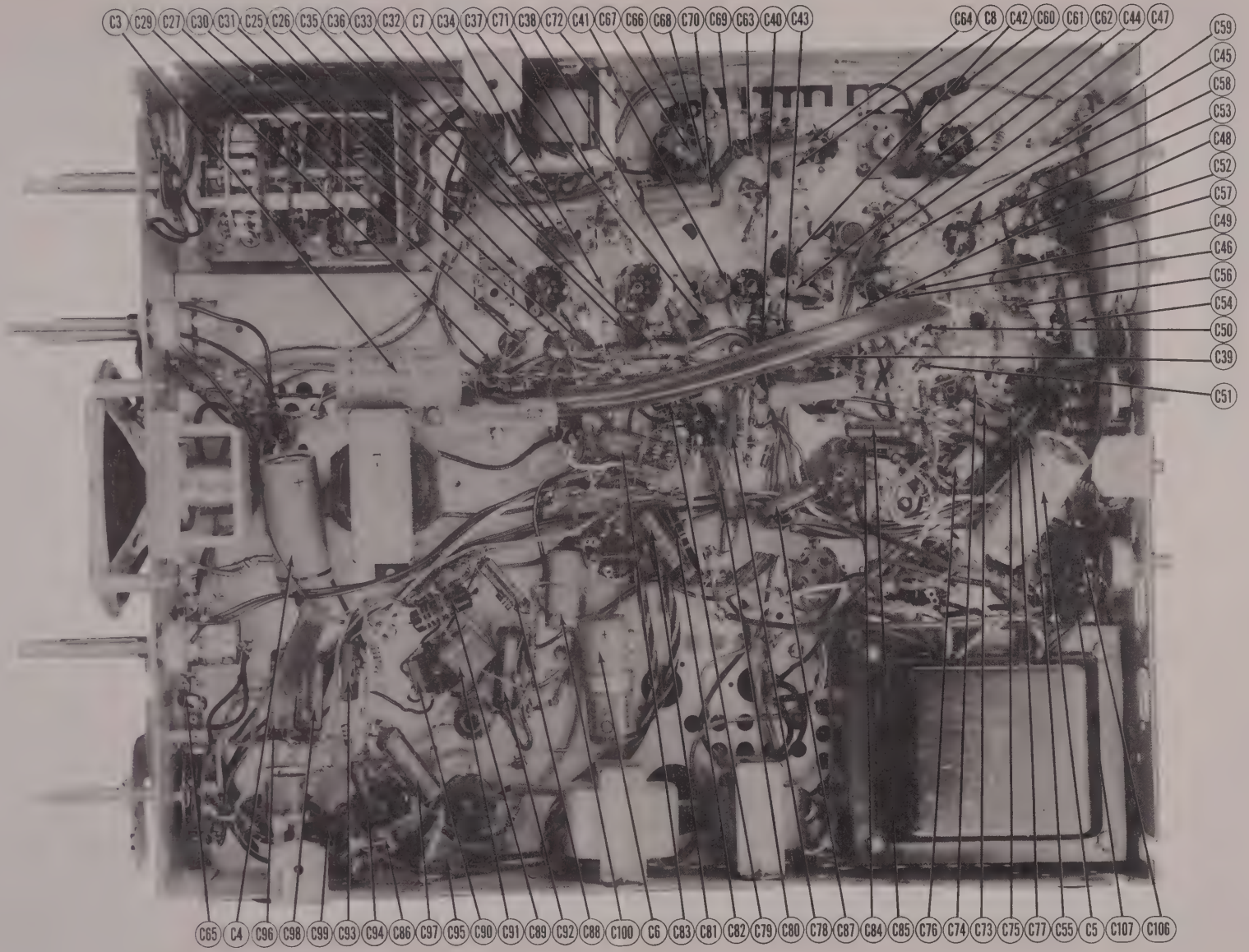
1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltage measured at 1,000 ohms.
2. Pin numbers are counted in a clockwise direction on bottom of socket.
3. Measured values are from socket pin to common negative unless otherwise stated.
4. Line voltage maintained at 117 volts for voltage readings.
5. Front panels controls set at minimum.
6. Where readings may vary according to the setting of the service controls, both minimum and maximum readings are given.



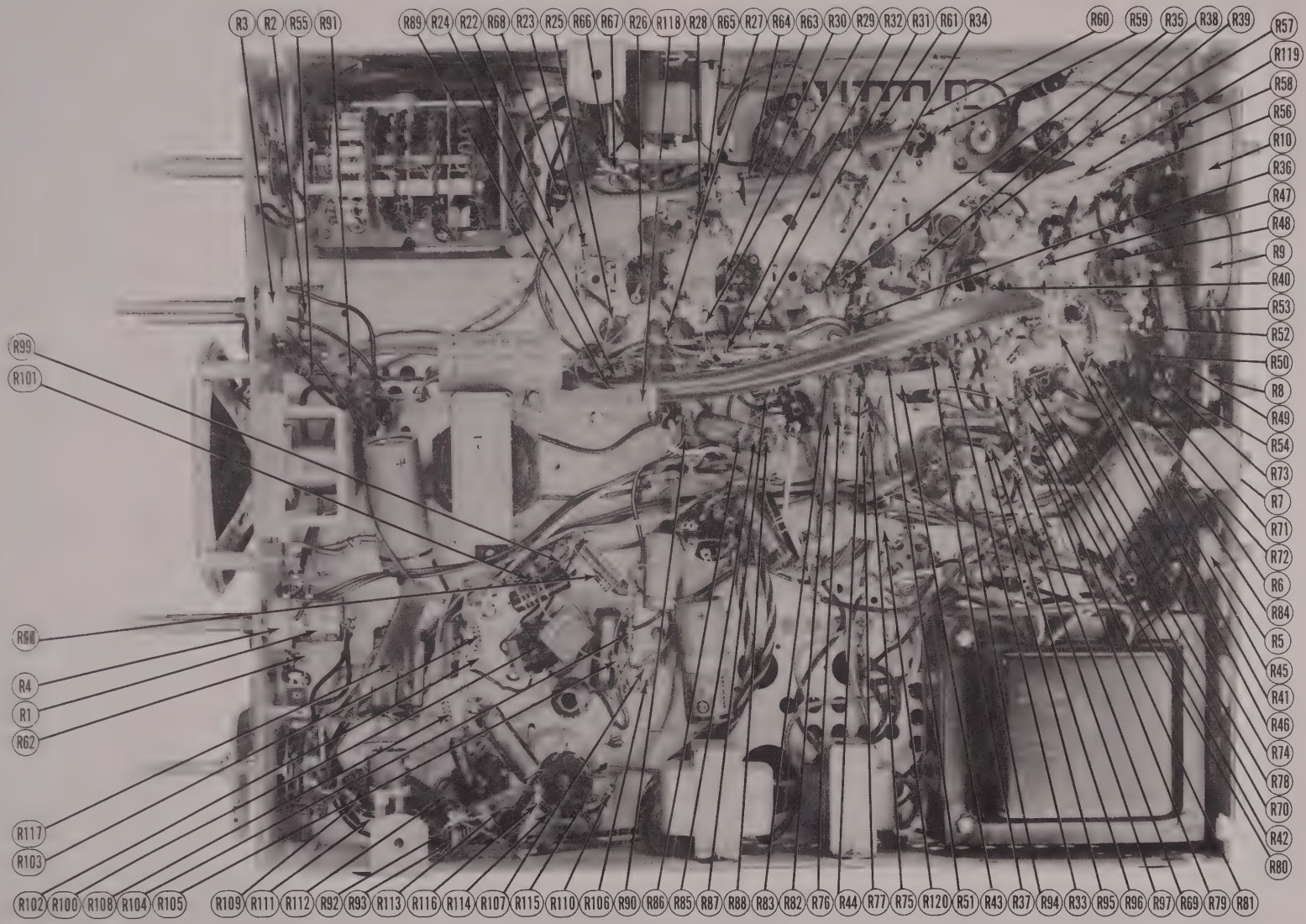
RF TUNER-RIGHT SIDE



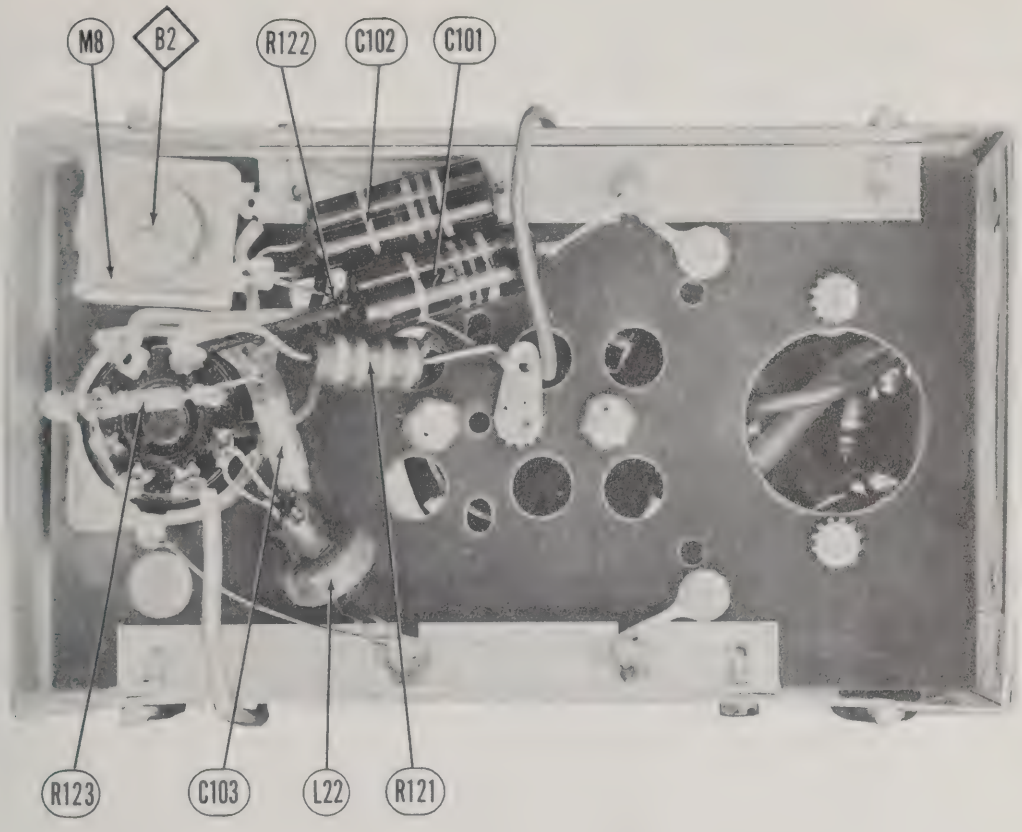
RF TUNER-LEFT SIDE



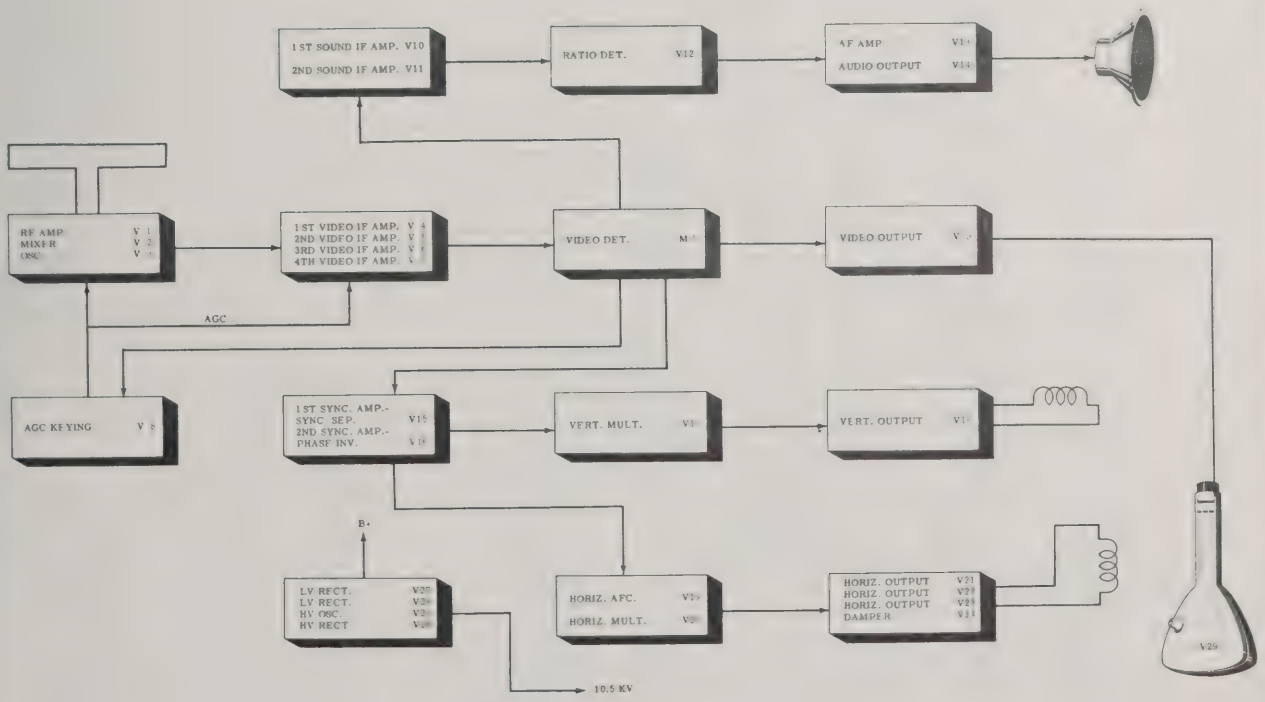
CHASSIS BOTTOM VIEW-CAPACITOR IDENTIFICATION



CHASSIS BOTTOM VIEW-RESISTOR IDENTIFICATION



HIGH VOLTAGE SUPPLY - BOTTOM VIEW



BLOCK DIAGRAM

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No	USE	REPLACEMENT DATA: WESTINGHOUSE PART No	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	NOTES
V1	RF Amp		6AG5	7BD	
V2	Mixer		6AG5	7BD	
V3	Oscillator		6C4	6BG	
V4	1st Video IF		6BH6	7CM	
V5	2nd Video IF		6BH6	7CM	
V6	3rd Video IF		6BH6	7CM	
V7	4th Video IF		6BJ6	7CM	
V8	AGC Keying		6BH6	7CM	
V9	Video Output		6AH6	7BK	
V10	1st Sound IF		6BH6	7CM	
V11	2nd Sound IF		6BH6	7CM	
V12	Ratio Det.		6AL5	6BT	
V13	AF Amp		6AV6	7BT	
V14	Audio Output		6Y6G	7AC	
V15	1st Sync. Amp. - Sync. Sep.		12AT7	9A	
V16	2nd Sync. Amp. - Phase Inv.		12AU7	9A	
V17	Vert. Mult.		12AU7	9A	
V18	Vert. Output		6AQ5	7BZ	
V19	Hor. AFC		6AL5	6BT	
V20	Hor. Mult		12AU7	9A	
V21	Hor. Output		7A5	6AA	
V22	Hor. Output		7A5	6AA	
V23	Hor. Output		7A5	6AA	
V24	Hor. Damper		6W4GT	4CG	
V25	HV Osc.		6Y6G	7AC	
V26	HV Rect		1B3GT	3C	
V27	LV Rect		5U4G	5T	
V28	LV Rect		5U4G	5T	
V29A	Picture Tube		12LP4	12D	
B	Picture Tube		12KP4	12D	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: WESTINGHOUSE PART No.	REPLACEMENT DATA: AEROVOX PART No.	REPLACEMENT DATA: CENTRALAB PART No.	REPLACEMENT DATA: ERIE PART No.	REPLACEMENT DATA: SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	30	450	V-6978	AF666F			TVL-314	▲ Filter
B	30	450						■ Filter
C	30	450						▲ Filter
C2A	80	400	V-6977	AF163222			TVL-410	▲ Filter
B	10	400						■ V. Output Screen Bypass
C	10	400						▲ Decoupling
D	10	400						Hor. MV Plate Dec.
C3	30	450	V-6570	PRSA450/30			TVA-23	Output Decoupling
C4	30	450	V-6570	PRSA450/30			TVA-23	Vert. Output Decoupling
C5	30	450	V-6570	PRSA450/30			TVA-23	Video Output Decoupling
C6	150	500	V-9008-1	PRS50/100		D15237		Vert. Output Cath. Bypass
				PRS50/50				
C7	20	25	V-3236	PRS25/25			TVA-8	Output Cathode Bypass
C8	2	50	V-4880	PRS150/4			TVA-12	Stabilizing Cap.
C9	25			GP25K	D6-250	GP2K-25		RF Coupling
C10	680			GP680M	D6-681	GP2K-680		RF Screen Bypass
C11	680			GP680M	D6-681	GP2K-680		AGC Filter
C12	680			GP680M	D6-681	GP2K-680		RF Filament Bypass
C13	680			GP680M	D6-681	GP2K-680		RF Bypass
C14	25			GP25K	D6-250	GP2K-25		RF Coupling
C15	.47							RF Coupling
C16	.5				D2-.5			RF Coupling
C17	1.5			CIL 5CNPO	D2-1.5	NPOK-1.5		RF Coupling
C18	15			GP15K	D6-150	GP1K-15		RF Coupling
C19	1.5			CIL 5CNPO	D2-1.5	NPOK-1.5		Osc. Coupling
C20	5000			BPD-5		811-005	29C1	Mixer Screen Bypass
C21	680			GP680M	D6-681	GP2K-680		Osc. Feedback
C22	3			CM3DN150		MI50K-3		Fixed Trimmer
C23	680			GP680M	D6-681	GP2K-680		Osc. Filament Bypass
C24	680			GP680M	D6-681	GP2K-680		RF Bypass
C25	5000		V-5596	BPD-5	D6-502	811-005	29C1	Filament Bypass
C26	150	500	RCM20B151K	1468-00015	DN-150	GP2K-150	1FM-315	IF Coupling
C27	5000		V-5596	BPD-5	D6-502	811-005	29C1	Mixer Plate Decoupling
C28	5000		V-5596	BPD-5	D6-502	811-005	29C1	RF Bypass †
C29	5000		V-5596	BPD-5	D6-502	811-005	29C1	AGC Filter
C30	5000		V-5596	BPD-5	D6-502	811-005	29C1	RF Bypass
C31	5000		V-5596	BPD-5	D6-502	811-005	29C1	1st V. IF Screen Bypass
C32	5000		V-5596	BPD-5	D6-502	811-005	29C1	1st V. IF Filament Bypass
C33	5000		V-5596	BPD-5	D6-502	811-005	29C1	1st V. IF Plate Decoupling
C34	270	500	RCM20B271K	1468-00025	DN-270	GP2K-270	1FM-325	IF Coupling
C35	5000		V-5596	BPD-5	D6-502	811-005	29C1	AGC Filter
C36	5000		V-5596	BPD-5	D6-502	811-005	29C1	2nd V. IF Screen Bypass
C37	5000		V-5596	BPD-5	D6-502	811-005	29C1	RF Bypass
C38	270	500	RCM20B271K	1468-00025	DN-270	GP2K-270	1FM-325	IF Coupling
C39	.01	400	V-6023-4103M	P488-01	D6-103	821-01	TM-11	AGC Filter
C40	5000		V-5596	BPD-5	D6-502	811-005	29C1	3rd V. IF Screen Bypass
C41	5000		V-5596	BPD-5	D6-502	811-005	29C1	3rd V. IF Cath. Bypass
C42	5000		V-5596	BPD-5	D6-502	811-005	29C1	3rd V. IF Fil. Bypass
C43	5000		V-5596	BPD-5	D6-502	811-005	29C1	RF Bypass
C44	270	500	RCM20B271K	1468-00025	DN-270	GP2K-270	1FM-325	IF Coupling
C45	5000		V-5596	BPD-5	D6-502	811-005	29C1	4th V. IF Cathode Bypass
C46	5000		V-5596	BPD-5	D6-502	811-005	29C1	4th V. IF Screen Bypass
C47	5000		V-5596	BPD-5	D6-502	811-005	29C1	4th V. IF Fil. Bypass
C48	5000		V-5596	BPD-5	D6-502	811-005	29C1	RF Bypass
C49	300	500	RCM20B301K	1468-0001	DN-100	GP1K-100	1FM-31	IF Coupling
C50	4.7		V-5658-6	CI4. 7DNPO	D2-4.7	NPOK-4.7	MS-55	Fixed Trimmer
C51	4.7		V-5658-6	CI4. 7DNPO	D2-4.7	NPOK-4.7	MS-55	V. Diode Filter
C52	.033	400	V-6023-4333M	P488-033			TM-13	V. Output Cathode Bypass
C53	5000		V-5596	BPD-5	D6-502	811-005	29C1	V. Output Screen Bypass
C54	.1	400	V-6023-4104K	P488-1			TM-1	Video Coupling
C55	.1	400	V-6023-4104K	P488-1			TM-1	Pic. Tube Grid Filter
C56	4.7		V-5658-6	CI4. 7DNPO	D2-4.7	NPOK-4.7	MS-55	S. IF Coupling
C57	.01	400	V-6023-4103M	P488-01	D6-103	821-01	TM-11	RF Bypass
C58	5000		V-5596	BPD-5	D6-502	811-005	29C1	1st S. IF Cathode Bypass
C59	47	500	RCM20B470K	1469-00005	DN-47	GP1K-47	1FM-45	S. IF Coupling
C60	.01	400	C-6023-4103M	P488-01	D6-103	821-01	TM-11	2nd S. IF Decoupling
C61	10	500	RCM20B100K	1469-0000I	D2-10	NPOK-10	MS-41	Fixed Trimmer
C62	680	500	RCM20B681M	1468-00075	D6-681	GP2K-680	1FM-37	Diode Load Cap.
C63	.002	600	V-6023-6202M	P688-002	D6-202	GP2M-002	TM-23	De-emphasis
C64	.01	400	V-6023-4103M	P488-01	D6-103	821-01	TM-11	Audio Coupling
C65	.01	400	V-6023-4103M	P488-01	D6-103	821-01	TM-11	Tone Compensation
C66	.01	400	V-6023-4103M	P488-01	D6-103	821-01	TM-11	Audio Coupling
C67	100	500	RCM20B100K	1468-0001	D6-101	GP1K-100	1FM-31	AF Amp. Grid Bypass
C68	270	500	RCM20B271K	1468-00025	D6-271	GP2K-270	1FM-325	AF Amp. Plate Bypass
C69	.01	400	V-6023-4103M	P488-01	D6-103	821-01	TM-11	Tone Compensation
C70	.1	400	V-6023-4104M	P488-1			TM-1	AF Amp. Plate Decoupling
C71	.01	400	V-6023-4103M	P488-01	D6-103	821-01	TM-11	Audio Coupling
C72	.002	600	V-6023-6202M	P688-002	D6-202	GP2M-002	TM-23	Output Plate Bypass
C73	390	500	RCM20B391K	1468-0004	DN-390	GP2K-390	1FM-34	Sync. Coupling
C74	.01	400	V-6023-4103M	P488-01	D6-103	821-01	TM-11	Sync. Coupling
C75	.047	400	V-6023-4503M	P488-047			TM-15	Sync. Coupling
C76	100	500	RCM20B101K	1468-0001	D6-101	GP1K-100	1FM-31	2nd Sync. Amp. Plate Bypass
C77	390	500	RCM20B391K	1468-0004	DN-390	GP2K-390	1FM-34	Sync. Coupling
C78A	2000		*	GP2000M	D6-202	GP2M-002	TM-22	Integrator Net.
B	5000			GP5000M	D6-502	811-005	TM-25	Integrator Net.
C	5000			GP5000M	D6-502	811-005	TM-25	Integrator Net.
C79	.01	400	V-6023-4103K	P488-01	D6-103		TM-11	Vert. MV Feedback
C80	.047	400	V-6023-4503M	P488-047			TM-15	Vert. MV Cath. Bypass
C81	.1	400	V-6023-4104M	P488-1			TM-1	Vert. Hold Control Bypass
C82	.1	400	V-6023-4104K	P488-1			TM-1	Vert. Discharge
C83	.1	400	V-6023-4104M	P488-1			TM-1	Vert. Sweep Coupling
C84	.001	600	V-6023-6102M	P688-001	D6-102	GP2L-001	TM-21	Hor. Sync. Coupling
C85	.001	600	V-6023-6102M	P688-001	D6-102	GP2L-001	TM-21	Hor. Sync. Coupling
C86	330	500	RCM20C331J	1469-00035	DN-330		MS-33	Hor. Feedback
C87	.0033	600	V-6023-6332M	P688-0033	D6-332	GP2M-0033	TM-23	AFC Filter
C88	.0047	600	V-6023-4472M	P688-0047	D6-472	GP2M-0047	TM-25	AFC Filter
C89	.047	400	V-6023-4503M	P488-047			TM-15	AFC Filter
C90	330	500	RCM20C331J	1469-00035	DN-330		MS-33	Hor. MV Feedback
C91	3900	500	RCM20C392K	1464-004			MS-24	Fixed Trimmer
C92	.1	400	V-6023-4104M	P488-1			TM-1	Hor. MV Plate Decoupling
C93	680	500	RCM20B681M		D6-681	GP2K-680	1FM-37	Hor. Discharge
C94	.01	400	V-6024-4103M	P488-01	D6-103	821-01	TM-11	Hor. Sweep Coupling
C95	270	500	RCM20B470K	1468-00025	D6-271	GP2K-270	1FM-325	Hor. Output Grid Bypass †
C96	.1	400	V-6023-4104M	P488-1			TM-1	Hor. Output Screen Bypass
C97	.1	400	V-6023-4104M	P488-1			TM-1	Hor. Output Cath. Bypass
C98	.1	400	V-6023-4104M	P488-1			TM-1	Hor. Output Plate Decoupling
C99	.1	400	V-6023-4104M	P488-1			TM-1	Hor. Sweep Coupling
C100	.25	400	V-6026-4254M	P488-25			TC-2	Damper Filter
C101	.047	400	V-6023-4503M	P488-047			TM-15	HV Osc. Screen Bypass
C102	.047	400	V-6023-4503M	P488-047			TM-15	HV Osc. Plate Decoupling
C103	270	500	RCM20B271K	1468-00025	D6-271	GP2K-270	1FM-325	HV Osc. Grid Cap.
C104	500	10000	V-5895		TV2-501			HV Filter
C105	500	10000	V-5895		TV2-501			HV Filter
C106	.01	600	V-5040-15	P688-01	D6-103	821-01	TM-11	Line Filter
C107	.01	600	V-5040-15	P688-01	D6-103	821-01	TM-11	Line Filter

* Items C78A, C78B and C78C. R82A. R82B. and R82C are combined into one unit obtainable under MFGR'S Part No. V-9213.
† Not used in all models.
‡ Some models use 47MMF in this application.

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: WESTING. PART No.	REPLACEMENT DATA: IRC PART No.	REPLACEMENT DATA: CLAROSTAT PART No.	REPLACEMENT DATA: CENTRALAB PART No.	INSTALLATION NOTES
R1A	2 Meg.	1/2	V-6305-2	B13-139X * B17-137 * E-202 * 76-1 *	V-6305-2	SBBT-512-S	Volume control-panel tapped at 500KΩ
B	1 Meg.	1/2					Tone control-rear
C	Shaft End						Attach per instructions in "Concentrikit".
D	Switch						Attach per instructions in "Concentrikit".
R2A	50KΩ	1/2	V-9235		V-9235		Brightness control-panel
B	150KΩ						Contrast control-rear
R3	100KΩ		V-9270-1	Q11-128	M-49-S	B-40	Horiz. hold control
R4	500KΩ		V-9271-1	Q11-133	M-58-S	B-59	Vert. hold control
R5A	25KΩ		V-5910	Q11-120	AM-40-S	AN-26	Vert. linearity magnifier control
B	Shaft		Not Req.	RQ	KSS-3 #	AK-1	Attach to R5A per instructions
R6A	1 Meg.	1/2	V-6462	Q11-137	AM-61-S	AN-89	Height control
B	Shaft		Not Req.	RQ	KSS-3 #	AK-1	Attach to R6A per instructions
R7A	2.5 Meg.	1/2	V-5909	Q11-239		B-83 #	Height magnifier control
B	Shaft		Not Req.	RQ			Attach to R7A per instructions
R8A	5000Ω	1/2	V-6463	Q11-114	AM-19-S	AN-10	Vert. linearity control
B	Shaft		Not Req.	RQ	KSS-3 #	AK-1	Attach to R8A per instructions
R9	5000Ω	3	V-6500-1		43-5000 #	V-135 #	Width control-Wire Wound
R10	400Ω	3	V-5908		43-400 #	V-126 #	Focus control-Wire Wound

* Additional parts to be used with "Concentrikit".
# File slot in shaft to duplicate original.

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: WESTINGHOUSE PART No.	REPLACEMENT DATA: IRC PART No.	IDENTIFICATION CODES: ALL RESISTORS ARE ± 10% UNLESS OTHERWISE STATED.
R11	1000Ω	1/2		BTS-1000	RF Grid
R12	1000Ω	1/2		BTS-1000	RF Screen
R13	10KΩ 20%	1			RF Plate
R14	18KΩ	1/2		BTS-18K	RF Coil Shunt
R15	4700Ω	1/2		BTS-4700	Mixer Coil Shunt
R16	1 Meg. 20%	1/2		BTS-1 Meg.	Mixer Grid
R17	82KΩ	1/2		BTS-82K	Mixer Grid
R18	82KΩ	1/2		BTS-82K	Mixer Screen
R19	22KΩ	1/2			Osc. Grid
R20	470 20%	1/2			Osc. Cathode
R21	6800Ω	1		BTA-6800	Osc. Plate
R22	2000Ω	5	V-6984-1	AB-2000	Decoupling-Wire Wound
R23	1000Ω 20%	1/2	RC20AE102M	BTS-1000	Mixer Plate Decoupling
R24	10KΩ 20%	1/2	RC20AE103M	BTS-10K	AGC Network
R25	12KΩ	1/2	RC20AE123K	BTS-12K	1st Video IF Grid
R26	100Ω	1/2	RC20AE400K		1st Video IF Cathode
R27	1000Ω 20%	1/2	RC20AE102M	BTS-1000	1st Video IF Screen
R28	1000Ω 20%	1/2	RC20AE102M	BTS-1000	1st Video IF Plate Decoupling
R29	10KΩ	1/2	RC20AE103K	BTS-10K	2nd Video IF Grid
R30	100Ω	1/2	RC20AE101K		2nd Video IF Cathode
R31	1000Ω 20%	1/2	RC20AE102M	BTS-1000	2nd Video IF Screen
R32	10KΩ 20%	1/2	RC20AE103M	BTS-10K	AGC Network
R33	2.2 Meg.	1/2	RC20AE225K	BTS-2.2 Meg.	AGC Network
R34	6800Ω	1/2	RC20AE682K		3rd Video IF Coil Shunt
R35	68Ω	1/2	RC20AE680K		3rd Video IF Cathode
R36	100KΩ	1	RC30AE104K		3rd Video IF Screen
R37	220KΩ	1	RC30AE224K	BTA-220K	AGC Keying Plate Load
R38	4700Ω	1/2	RC20AE472K	BTS-4700	4th Video IF Coil Shunt
R39	68Ω	1/2	RC20AE680K		4th Video IF Cathode
R40	47KΩ	1	RC30AE473K	BTA-47K	4th Video IF Screen
R41	1 Meg.	1/2	RC20AE105K	BTS-1 Meg.	Voltage Divider
R42	4700Ω	1/2	RC20AE472K	BTS-47K	AGC Keying Grid
R43	5000Ω	5	V-5925	AB-5000	AGC Keying Cathode-Wire Wound
R44	1000Ω	1	RC30AE102K	BTA-1000	Voltage Divider
R45	10KΩ	1/2	RC20AE103K	BTS-10K	Isolation
R46	4700Ω	1/2	RC20AE472K	BTS-4700	Video Det. Load
R47	10Ω	1/2	RC20AE100K		Parasitic Supp.
R48	33Ω 20%	1/2	RC20AE330M		Video Output Cathode
R49	3600Ω 5%	1	RC30AE362J		Video Output Plate
R50	10KΩ	2	RC41AE103K	BT-2-10K	Video Output Plate Decoupling
R51	68KΩ	1	RC30AE683K	BTA-68K	Video Output Screen
R52	270KΩ	1/2	RC20AE274K	BTS-270K	Voltage Divider
R53	100KΩ	1/2	RC20AE104K	BTS-100K	Voltage Divider
R54	150KΩ	1/2	RC20AE154K	BTS-150K	Picture Tube Cathode
R55	47KΩ	1/2	RC20AE473K	BTS-47K	Voltage Divider
R56	100Ω	1/2	RC20AE101K		1st Sound IF Cathode
R57	47KΩ	1/2	RC20AE473K		2nd Sound IF Grid
R58	68KΩ	1/2	RC30AE683K	BTA-68K	2nd Sound IF Decoupling
R59	33KΩ	1/2	RC20AE333K	BTS-33K	De-emphasis
R60	10KΩ 5%	1/2	RC20AE103J	BTS-10K-5%	Ratio Det. Diode Load
R61	10KΩ 5%	1/2	RC20AE103J	BTS-10K-5%	Ratio Det. Diode Load
R62	22KΩ	1/2	RC20AE223K	BTS-22K	Tone Compensation
R63	10 Meg. 20%	1/2	RC20AE106M	BTS-10 Meg.	AF Amp. Grid
R64	270KΩ	1/2	RC20AE274K	BTS-270K	AF Amp. Plate
R65	47KΩ	1/2	RC20AE473K	BTS-47K	AF Amp. Plate Decoupling
R66	470KΩ	1/2	RC20AE474K	BTS-470K	Output Grid
R67	190Ω	3	V-5134		Output Cathode-Wire Wound
R68	240Ω 5%	2	RC40AE241J		Output Decoupling
R69	22KΩ	1/2	RC20AE223K	BTS-22K	1st Sync. Amp. Plate-See Note 1
R70	470KΩ	1/2	RC20AE474K	BTS-470K	Charge Limiting
R71	1 Meg.	1/2	RC20AE105K	BTS-1 Meg.	1st Sep. Grid
R72	150KΩ	1/2	RC20AE154K	BTS-150K	1st Sep. Plate
R73	22KΩ	1/2	RC20AE223K	BTS-22K	Voltage Divider-See note 2.
R74	1 Meg.	1/2	RC20AE105K	BTS-1 Meg.	2nd Sync. Amp. Grid
R75	1000Ω	1/2	RC20AE102K	BTS-1000	2nd Sync. Amp. Cathode
R76	220Ω	1/2	RC20AE221K		2nd Sync. Amp. Cathode
R77	150Ω	1/2	RC20AE151K		2nd Sync. Amp. Cathode-See Note 3
R78	15KΩ	2	RC41AE153K	BT-2-15K	2nd Sync. Amp. Plate
R79	2.2 Meg.	1/2	RC20AE225K	BTS-2.2 Meg.	Sync. Phase Inv. Grid-See Note 4
R80	2700Ω	1/2	RC20AE272K	BTS-2700	Sync. Phase Inv. Plate
R81	2700Ω	1/2	RC20AE272K	BTS-2700	Sync. Phase Inv. Cathode
R82A	22KΩ	1/2	†	BTS-22K	Integrator Network
B	8200Ω	1/2	†	BTS-8200	Integrator Network
C	8200Ω	1/2	†	BTS-8200	Integrator Network
R83	100KΩ	1/2	RC20AE104K	BTS-100K	Vert. MV Plate
R84	47KΩ	1/2	RC20AE473K	BTS-47K	Vert. MV Decoupling
R85	390KΩ 5%	1/2	RC20AE394J	BTS-390K-5%	Vert. MV Plate
R86	470KΩ	1/2	RC20AE474K	BTS-470K	Vert. MV Grid
R87	1000Ω	1/2	RC20AE102K	BTS-1000	Vert. MV Cathode
R88	3900Ω	1/2	RC20AE392K	BTS-3900	Vert. Peaking
R89	2.2 Meg.	1/2	RC20AE225K	BTS-2.2 Meg.	Vert. Output Grid
R90	470Ω	1/2	RC20AE471K	BTS-470	Vert. Output Cathode
R91	470Ω	1/2	RC20AE471K	BTS-470	Vert. Output Decoupling
R92	220KΩ	1	RC30AE224K	BTA-220K	Feedback Network
R93	220KΩ	1	RC30AE224K	BTA-220K	Feedback Network
R94	68KΩ	1/2	RC20AE683K	BTS-68K	Horiz. AFC Filter Network
R95	100KΩ 5%	1/2	RC20AE104J	BTS-100K-5%	Horiz. AFC Diode Load
R96	100KΩ 5%	1/2	RC20AE104J	BTS-100K-5%	Horiz. AFC Diode Load
R97	4.7 Meg. 20%	1/2	RC20AE475M	BTS-4.7 Meg.	Horiz. AFC Diode Load
R98	470KΩ	1/2	RC20AE474K	BTS-470K	Horiz. AFC Filter Network
R99	1800Ω	1/2	RC20AE182K	BTS-1800	Horiz. MV Cathode
R100	100Ω	1/2	RC20AE101K		Horiz. MV Cathode-See Note 3
R101	5600Ω	1/2	RC20AE562K	BTS-5600	Horiz. MV Plate
R102	220KΩ 5%	1/2	RC20AE224J	BTS-220K-5%	Horiz. MV Grid
R103	47KΩ	1/2	RC20AE473K	BTS-47K	Horiz. MV Grid
R104	220KΩ	1/2	RC20AE224K	BTS-220K	Horiz. MV Plate
R105	10KΩ	1/2	RC20AE103K	BTS-10K	Horiz. MV Plate Decoupling
R106	10KΩ	1/2	RC20AE103K	BTS-10K	Horiz. MV Plate Decoupling
R107	22KΩ	1/2	RC20AE223K	BTS-22K	Horiz. MV Plate Decoupling-See Note 3
R108	27KΩ	1/2	RC20AE273K	BTS-27K	Horiz. Peaking
R109	120Ω	1/2	RC20AE121K		Parasitic Supp.
R110	100KΩ	1/2	RC20AE104K	BTS-100K	Horiz. Output Grid-See Note 5
R111	33Ω 20%	1/2	RC20AE330M		Parasitic Supp.
R112	120Ω	1/2	RC20AE121K		Parasitic Supp.
R113	33Ω 20%	1/2	RC20AE330M		Parasitic Supp.
R114	120Ω	1/2	RC20AE121K		Parasitic Supp.
R115	33Ω 20%	1/2	RC20AE330M		Parasitic Supp.
R116	150Ω	3	V-6067-4		Horiz. Output Cathode-Wire Wound
R117	10KΩ	5	V-6984-5	AB-10000	Horiz. Output Screen-Wire Wound
R118	2000Ω	5	V-6984-1	AB-2000	Damper Plate-Wire Wound
R119	110Ω	3	V-8214		Focus Coil Shunt-Wire Wound
R120	560Ω	5	V-6984-6		HV Osc. Decoupling-Wire Wound
R121	33KΩ	2	RC41AE333K	BT-2-33K	HV Osc. Screen
R122	680Ω	1/2	RC20AE680K		Parasitic Supp.
R123	68KΩ	1/2	RC20AE683K	BTS-68K	HV Osc. Grid
R124	100KΩ	1/2	RC20AE104K		HV Filter

† Items C78A, C78B, C78C, R82A, R82B, R82C are combined into one unit obtainable under MFGR'S Part No. V-9213.
Note 1. Some models use 5600Ω resistor in this application.
Note 2. Some models use 33KΩ resistor in this application.
Note 3. Not used in all models.
Note 4. Some models use 100KΩ resistor in this application.
Note 5. Some models use 470KΩ resistor in this application.

TRANSFORMER (POWER)

ITEM No.	RATING: PRI.	RATING: SEC. 1	RATING: SEC. 2	RATING: SEC. 3	REPLACEMENT DATA: WESTINGHOUSE PART No.	REPLACEMENT DATA: STANCOR PART No.	REPLACEMENT DATA: MERIT PART No.	REPLACEMENT DATA: CHICAGO PART No.
T1	117VAC @ 2.18A	660VCT @ .270ADC	5VAC @ 6A	12.6VCT @ 5A	V-6988	P-8156 ①	P-3061 ①	TP-365

① Add series resistor to reduce plate voltage. File out mounting holes.

PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (FILAMENT)

ITEM No.	RATING				REPLACEMENT DATA			
	PRI.	SEC. 1	SEC. 2	SEC. 3	WESTINGHOUSE PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.
T2	117VAC ⓐ .1A	6.3VAC ⓐ 1.2A.			V-6481-2	P-6134 ②	P-2945	F-633 ②

② Drill one new mounting hole.

TRANSFORMER (SWEEP CIRCUITS)

ITEM No.	RATING		REPLACEMENT DATA				NOTES
	DC RESISTANCE		WESTINGHOUSE PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
	PRI.	SEC.					
T3	510Ω		V-6979-1				Hor. Output Choke
T4	700Ω	8Ω	V-6981-1	A-8112 ②	A-3036 ②	TSO-5	Vert. Output Trans.
T5A	36Ω		V-6486-2	DY-1	MD-3		Hor. Deflection Coil
B	65Ω						Vert. Deflection Coil
T6	250Ω		V-5900-2	FC-10	MF-1		Focus Coil
T7	2Ω	700Ω	V-9279-1				HV Trans.
		SEC. 2					
		0Ω					

② Drill one new mounting hole.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		WESTING-HOUSE PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
	PRI.	SEC.	PRI.	SEC.					
T8	1.8KΩ	3.6Ω	265Ω	.6Ω	V-6987	A-3876 ②	A-2928 ②	RO-2 ②	② Drill one new mounting hole.

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			NOTES
	FIELD RES.	V. C. IMP.	WESTINGHOUSE PART No.	JENSEN PART No.	QUAM PART No.	
SP1	PM	3.6Ω	V-9444	ST-107 MOD. P5-V	5A15	
	CONE DIA.	V. C. DIA.				
SP2	4 1/2"	9/16"				

FILTER CHOKE

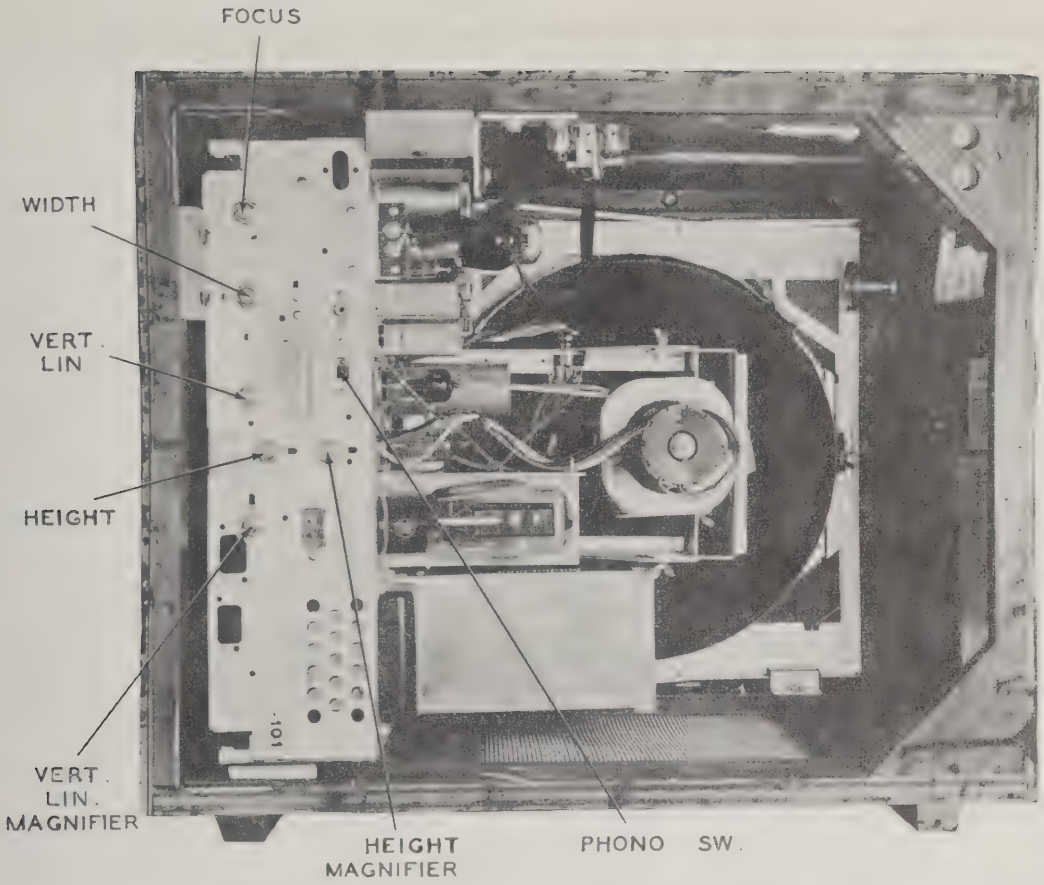
ITEM No.	RATINGS			REPLACEMENT DATA				INSTALLATION NOTES
	TOTAL DIRECT CURRENT	D. C. RESISTANCE	INDUCTANCE (0 CURRENT 1000 ∿)	WESTING-HOUSE PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
L1	.270A	41.5Ω	1.4 Henries	V-6471	C-2326 ②	C-2996 ②	TR-4200③	② Drill one new mounting hole. ③ Drill new mounting holes.

COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA		NOTES
		PRI.	SEC.	WESTINGHOUSE PART No.	MEISSNER PART No.	
L2	Ant. Trans.	.1Ω	.1Ω			Part of tuner Part # V-8209
L3	Fil. Choke	.1Ω				Part of tuner Part # V-8209
L4	Fil. Choke	.1Ω				Part of tuner Part # V-8209
L5	Fil. Choke	.1Ω		V-4886-2		
L6	1st Video IF	.5Ω		V-6459		
L7	2nd Video IF	.5Ω		V-6459		
L8	RF Choke	3.5Ω		V-5902-7		
L9	3rd Video IF	.5Ω		V-6459		
L10	RF Choke	3.5Ω		V-5902-7		
L11	4th Video IF	.5Ω		V-6459		
L12	4th Video IF Cathode Trap	.5Ω	.5Ω	V-5899		
L13	Peaking	3.5Ω		V-5902-7		
L14	5th Video IF	.5Ω		V-6459		
L15	Peaking	5Ω		V-5902-4		
L16	Peaking	5.7Ω		V-5902-1		Wound on 22KΩ resistor.
L17	Peaking	8Ω		V-5902-5		
L18	Sound IF	1.9Ω		V-6517		
L19	RF Choke	4.9Ω		V-5902-4		
L20	Ratio Det. Trans.	6.8Ω	.7Ω	V-6483		
L21	Ringing Coil	105Ω		V-6764		
L22	RF Choke	.1Ω		V-4886-2		
L23	Fil. Choke	.1Ω		V-4886-2		
L24	Fil. Choke	.1Ω		V-4886-2		
L25	Fil. Choke	.1Ω		V-4886-2		
L26	Fil. Choke	.1Ω		V-4886-2		
L27	Fil. Choke	.1Ω		V-4886-2		

MISCELLANEOUS

ITEM No.	PART NAME	WESTINGHOUSE PART No.	NOTES
M1	RF Tuner	V-8209	
M2	Switch	V-6986	Picture expander
M3	Switch	V-5406	Phono-TV
M4	Ion Trap	V-6573-1	Used with 12LP4 picture tube only
M5	Crystal	V-6962-1	Video det. 1N-34
M6	Ant. Assy.	V-9358-1	
M7	Trimmer	V-3713-3	4th Video IF cathode trap
M8	Trimmer	V-9398	4.5MC trap
	Knob	V-5100-1	TV Ant.
	Knob	V-6146-1	Cont., Off-On, Tone
	Knob	V-9104-3	Vert., Horiz, Picture expander (rear)
	Knob	V-9104-1	Vol. brightness (rear)
	Knob	V-9104-4	Fine tuning (rear)
	Knob	V-6146-5	Vert., Horiz.
	Knob	V-6284-2	Channel Select., Picture Expander



CABINET–REAR VIEW

HORIZONTAL AND VERTICAL SWEEP CIRCUIT ADJUSTMENTS

HORIZONTAL OSCILLATOR ADJUSTMENT

Turn the set on and tune in a TV station.
Turn the picture expander switch to "large" (clockwise).
Turn the horizontal hold control to the mid-position of its range.
Adjust the horizontal frequency slug (B1) until the picture synchronizes horizontally.

HORIZONTAL WIDTH ADJUSTMENT

Turn the picture expander switch to "large" (clockwise), and adjust the horizontal hold control until the picture synchronizes horizontally.
Turn the picture expander switch to "normal" (counter-clockwise), and without touching the hold control turn the width control until the picture synchronizes horizontally and is of proper width.

VERTICAL HEIGHT AND LINEARITY ADJUSTMENTS

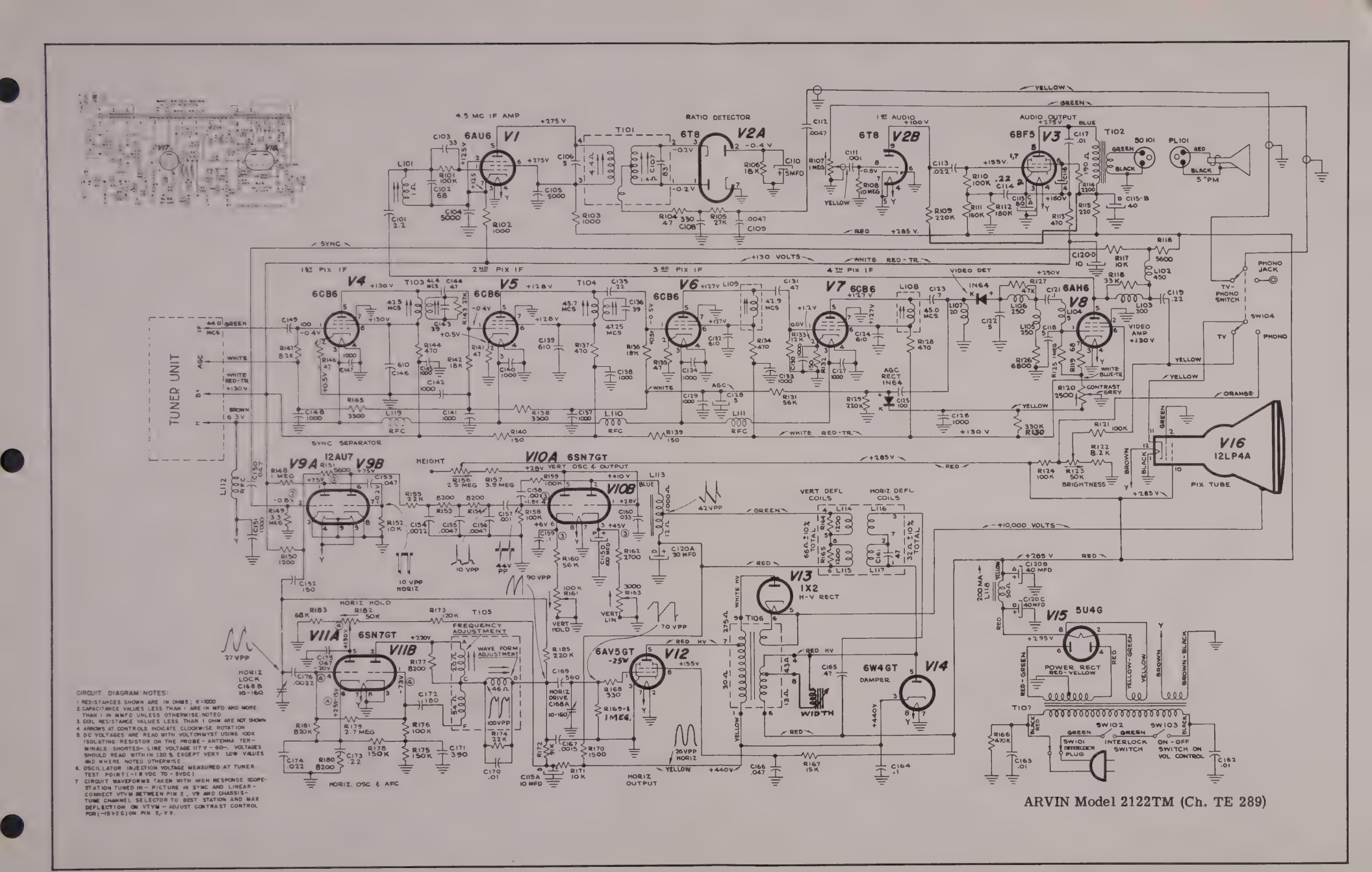
Turn the picture expander switch to "normal" (counter-clockwise).
Adjust the height and vertical linearity controls until the picture is of proper height and is symmetrical from top to bottom. These two controls are interacting and will require alternate adjustment to obtain proper results.
Turn the picture expander to "large". Adjust the vertical linearity magnifier control, and the height magnifier control alternately until the picture is of proper magnified height and is symmetrical from top to bottom. Each time the "normal" height and linearity controls are changed, the "magnified" controls will require adjustment.

HIGH VOLTAGE OSCILLATOR ADJUSTMENTS

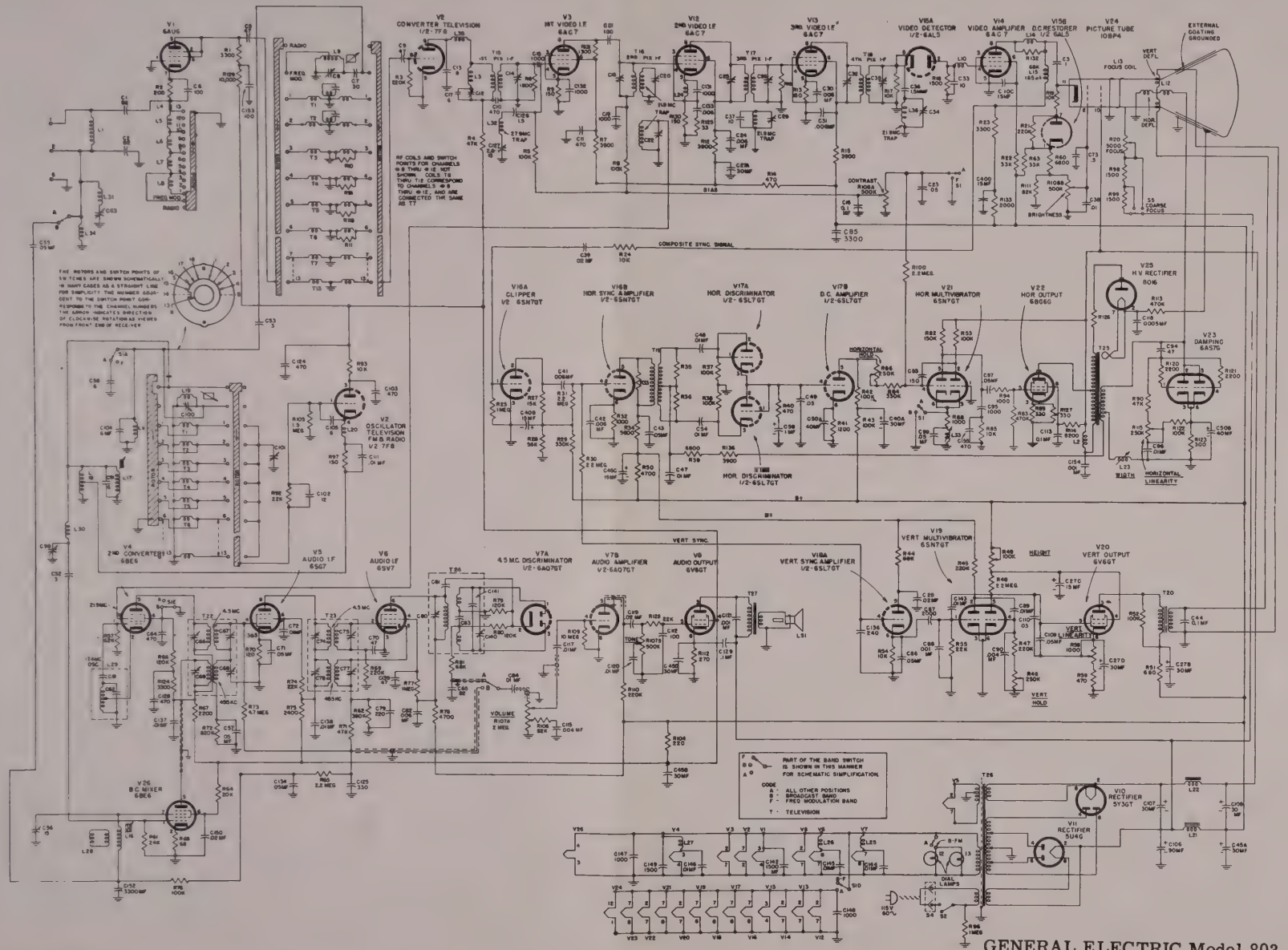
Connect 18 one megohm, one watt resistors in series from the high voltage lead to chassis.
Connect the high voltage multiplier probe of a VTVM to the high voltage lead. Connect the common lead to chassis.
Adjust the high voltage oscillator adjustment trimmer (B2) until the meter reads approximately 9.3 kilovolts.

DISASSEMBLY INSTRUCTIONS

1. Remove twelve push-on type control knobs from front of set.
2. Remove seven screws holding rear cover. Remove cover.
3. Remove red painted screws holding packing blocks. Remove packing blocks from rear of chassis.
4. Disconnect built-in antenna at chassis terminals. Remove two screws and tack holding antenna tuning assembly mounted in top of cabinet. Disconnect tuning shaft and remove assembly.
5. Tape antenna tuning shaft to inner top of cabinet leaving room for chassis removal.
6. Remove two screws holding chassis support to top of cabinet.
7. Remove one 5/16" hex nut holding picture tube frame bracket. Remove bracket.
8. Remove two 7/16" hex head bolts holding chassis. Remove chassis.



ARVIN Model 2122TM (Ch. TE 289)


V1 6AU6
V2 CONVERTER TELEVISION 1/2-7F8
V3 1ST VIDEO I.F. 6AC7
V12 2ND VIDEO I.F. 6AC7
V13 3RD VIDEO I.F. 6AC7
V15A VIDEO DETECTOR 1/2-6AL5
V16 VIDEO AMPLIFIER 6AC7
V15B D.C. RESTORER 1/2-6AL5
V24 PICTURE TUBE 10BP4
EXTERNAL COATING GROUNDED
V16A CLIPPER 1/2-6SN7GT
V16B HOR. SYNC AMPLIFIER 1/2-6SN7GT
V17A HOR. DISCRIMINATOR 1/2-6SL7GT
V17B D.C. AMPLIFIER 1/2-6SL7GT
V21 HOR. MULTIVIBRATOR 6SN7GT
V22 HOR. OUTPUT 6BG6G
V25 H.V. RECTIFIER 8016
V23 DAMPING 6A5G
V2 OSCILLATOR TELEVISION FM & RADIO 7F8
V4 2ND CONVERTER 6BE6
V5 AUDIO I.F. 6SG7
V6 AUDIO I.F. 6SV7
V7A 4.5 MC. DISCRIMINATOR 1/2-6AQ7GT
V7B AUDIO AMPLIFIER 1/2-6AQ7GT
V8 AUDIO OUTPUT 6V6GT
V16A VERT. SYNC AMPLIFIER 1/2-6SL7GT
V19 VERT. MULTIVIBRATOR 6SN7GT
V20 VERT. OUTPUT 6V6GT
V26 RF MIXER 6BE6
V10 RECTIFIER 5Y3GT
V11 RECTIFIER 5U4G
COMPOSITE SYNC. SIGNAL
VERT. SYNC.
PART OF THE BAND SWITCH IS SHOWN IN THIS MANNER FOR SCHEMATIC SIMPLIFICATION
CODE
A - ALL OTHER POSITIONS
B - BROADCAST BAND
F - FREQ. MODULATION BAND
T - TELEVISION
GENERAL ELECTRIC Model 803

PRELIMINARY DATA

SET 97A FOLDER 1,4

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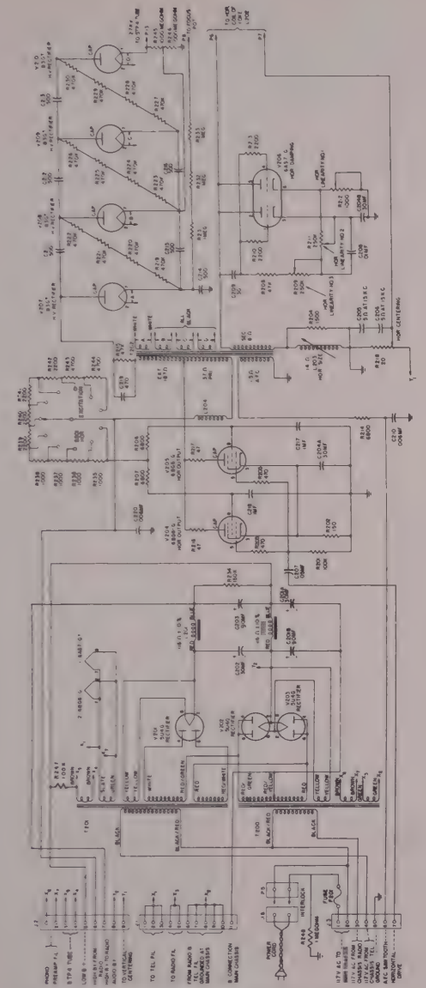
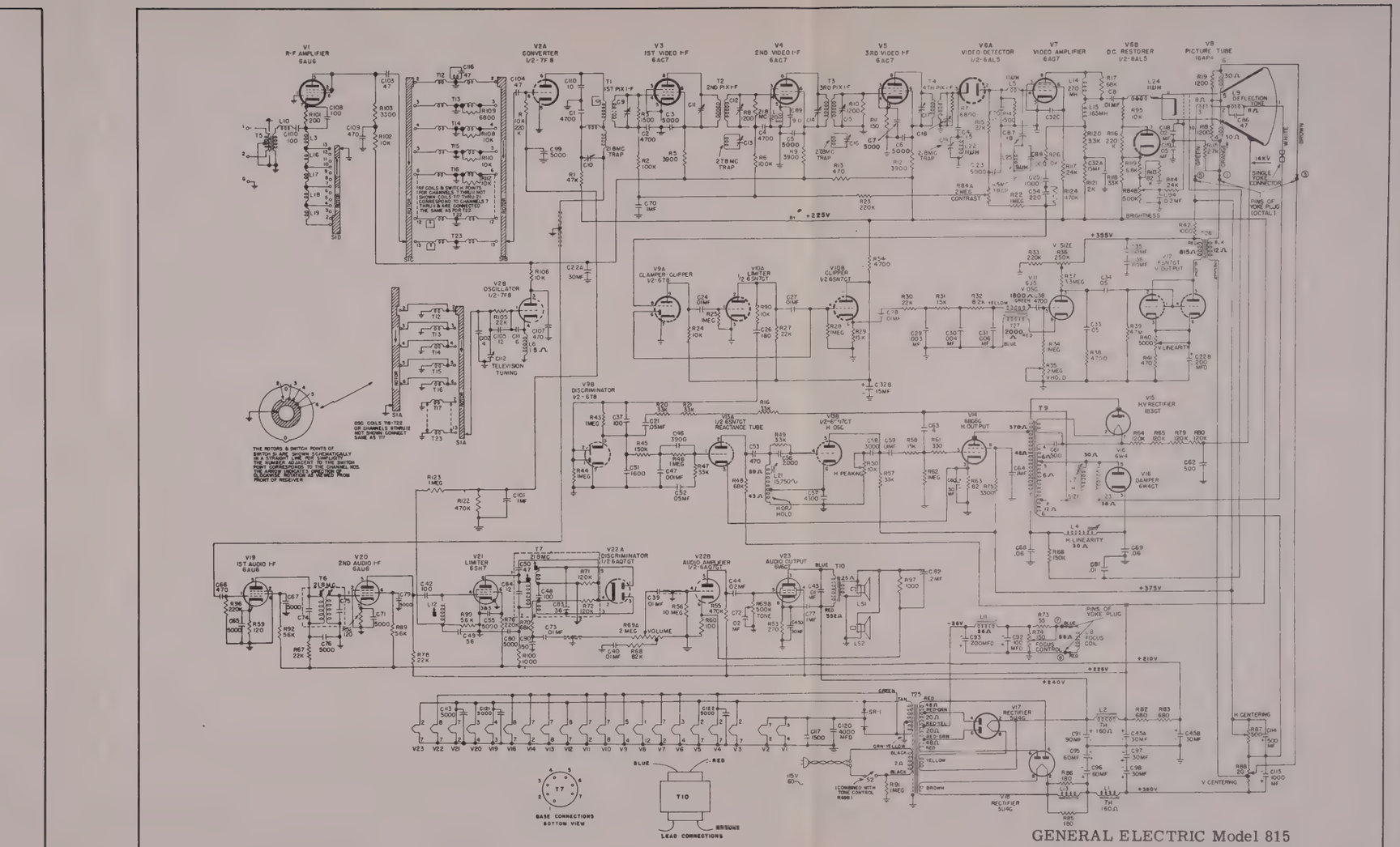
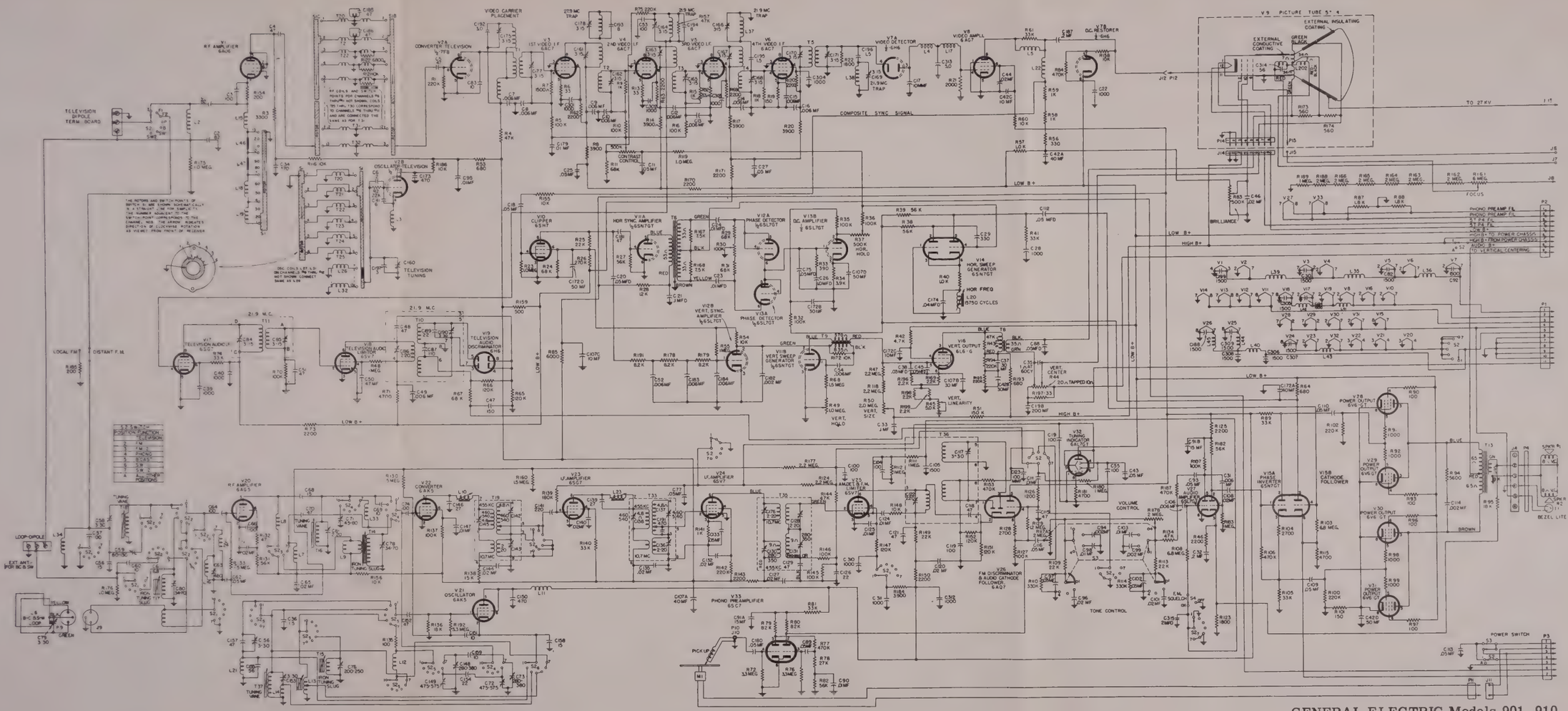


GE Models 901 and 910 Power Supply



GENERAL ELECTRIC Model 815



GENERAL ELECTRIC Models 901, 910

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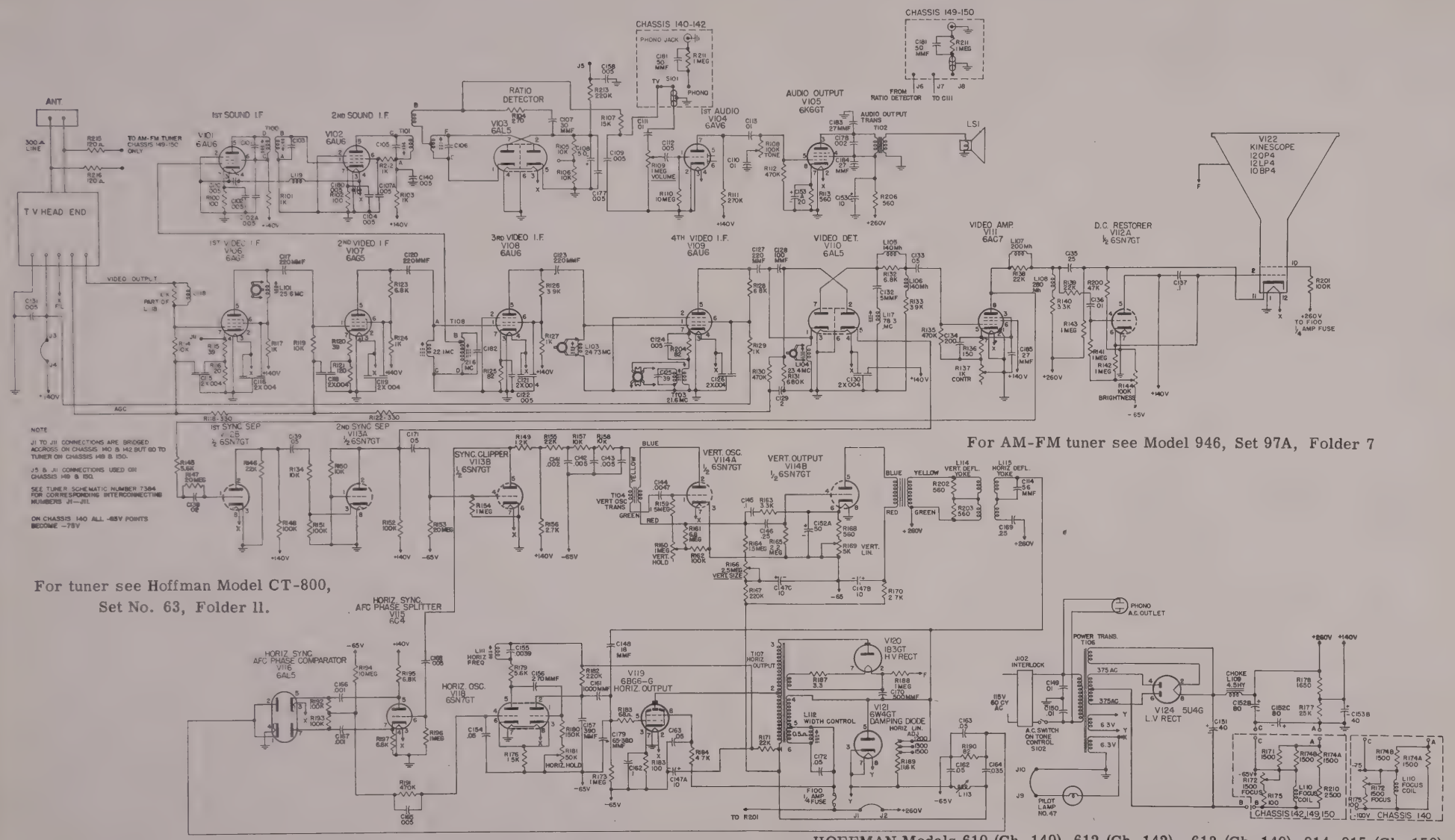
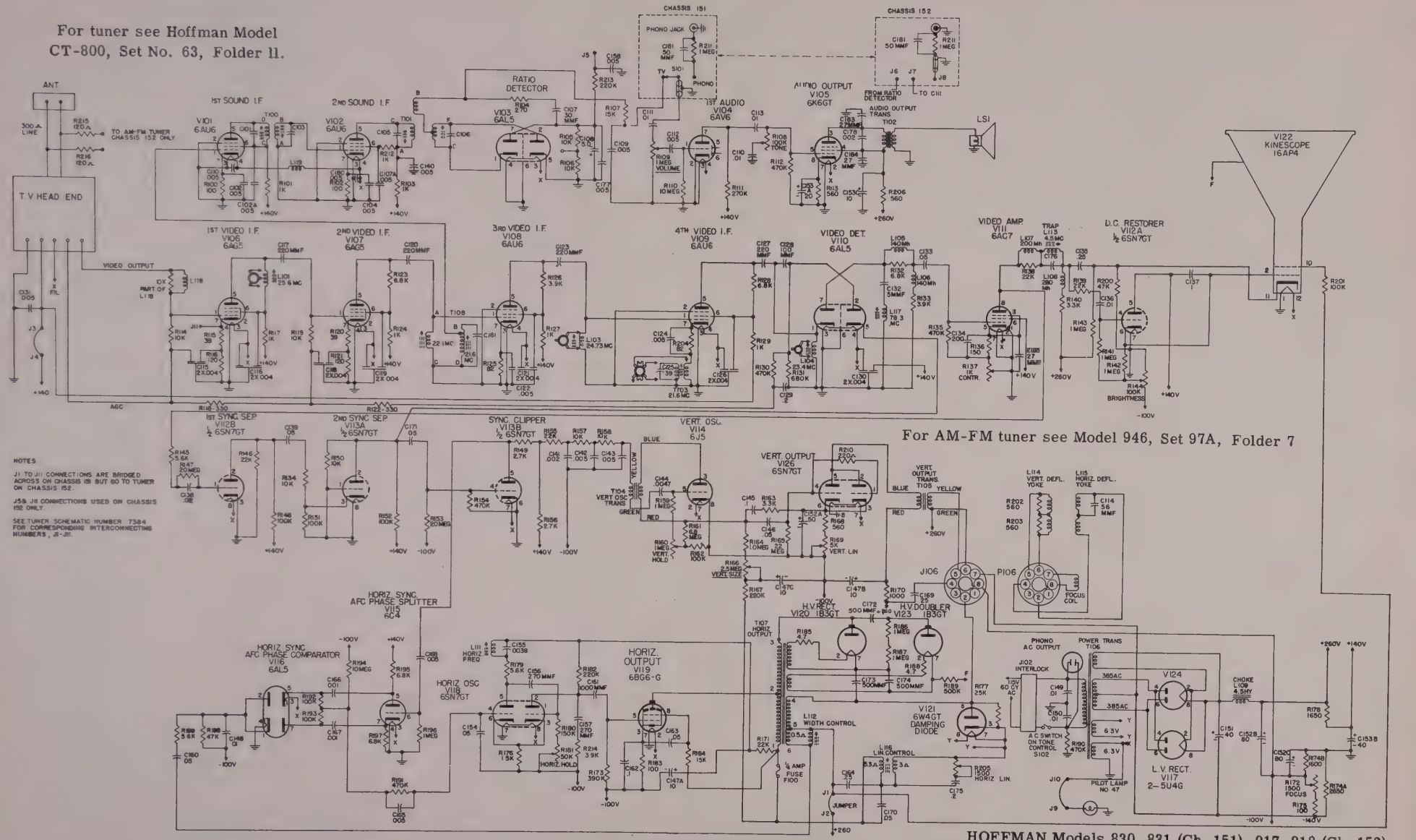

CHASSIS 140-142
CHASSIS 149-150
ANT
T V HEAD END
RATIO DETECTOR
AUDIO OUTPUT V105 6K6GT
1ST AUDIO V104 6AV6
1ST SOUND I.F
2ND SOUND I.F
1ST VIDEO I.F V106 6AG5
2ND VIDEO I.F V107 6AG5
3RD VIDEO I.F. V108 6AU6
4TH VIDEO I.F. V109 6AU6
VIDEO DET. V110 6AL5
VIDEO AMP. V111 6AG7
D.C. RESTORER V112A 1/2 6SN7GT
V122 KINESCOPE 12QP4 12LP4 10BP4
1ST SYNC SEP V113A 1/2 6SN7GT
2ND SYNC SEP V113A 1/2 6SN7GT
SYNC. CLIPPER V113B 1/2 6SN7GT
VERT. OSC. V114A 1/2 6SN7GT
VERT. OUTPUT V114B 1/2 6SN7GT
HORIZ. SYNC. AFC PHASE SPLITTER V115 6C4
HORIZ. SYNC. AFC PHASE COMPARATOR V116 6AL5
HORIZ. OSC. V118 6SN7GT
V119 6BG6-G HORIZ. OUTPUT
V120 1B3GT H.V RECT
V121 6W4GT DAMPING DIODE
V124 5U4G L.V RECT
PHONO A.C. OUTLET
POWER TRANS. T106
CHASSIS 142,149,150
CHASSIS 140
NOTE
SEE TUNER SCHEMATIC NUMBER 7384 FOR CORRESPONDING INTERCONNECTING NUMBERS J1—J11.
ON CHASSIS 140 ALL -65V POINTS BECOME -75V

For AM-FM tuner see Model 946, Set 97A, Folder 7

For tuner see Hoffman Model CT-800, Set No. 63, Folder 11.

HOFFMAN Models 610 (Ch. 140), 612 (Ch. 142), 613 (Ch. 149), 914, 915 (Ch. 150)



HOFFMAN Models 830, 831 (Ch. 151), 917, 918 (Ch. 152)

PRELIMINARY DATA

SET 97A FOLDER 6

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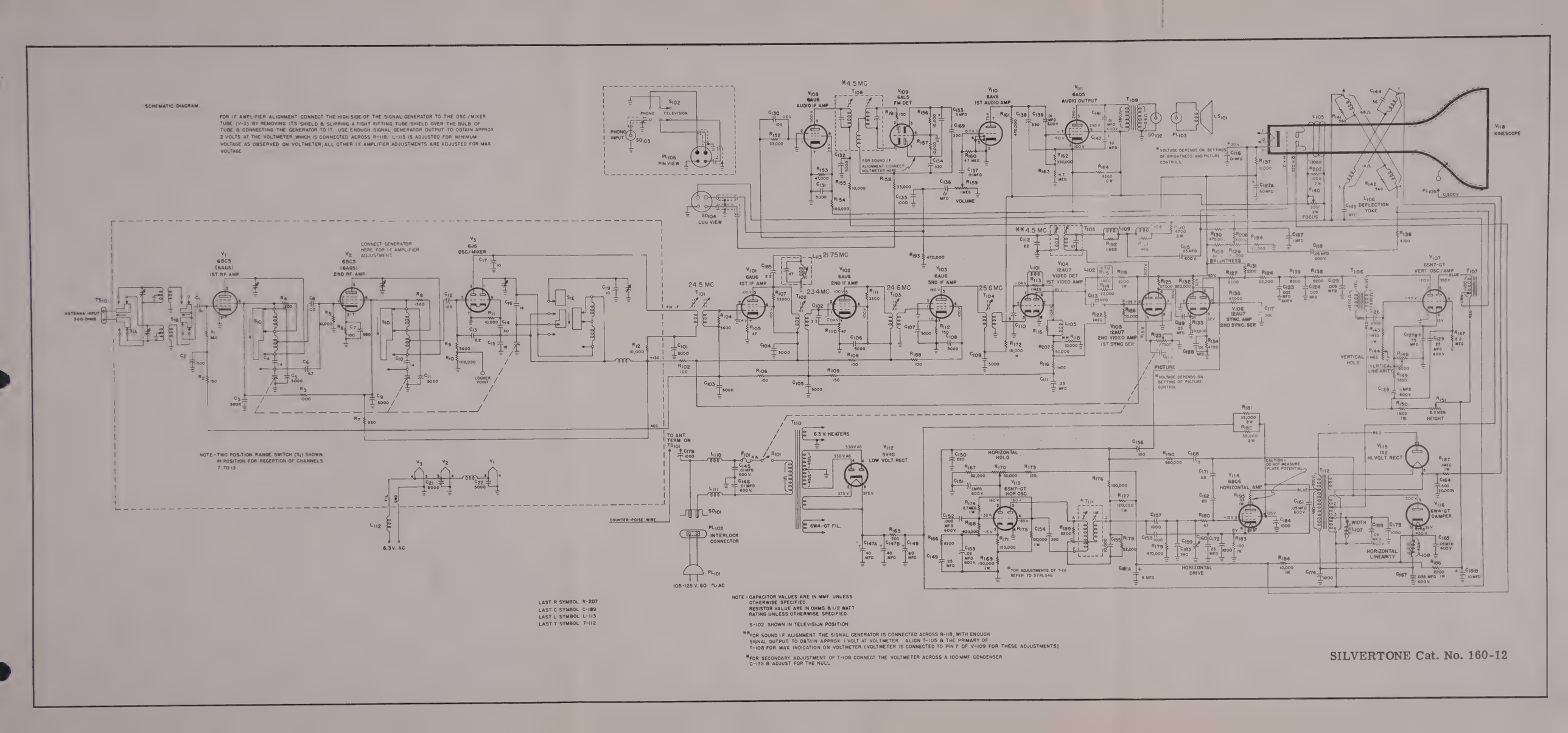
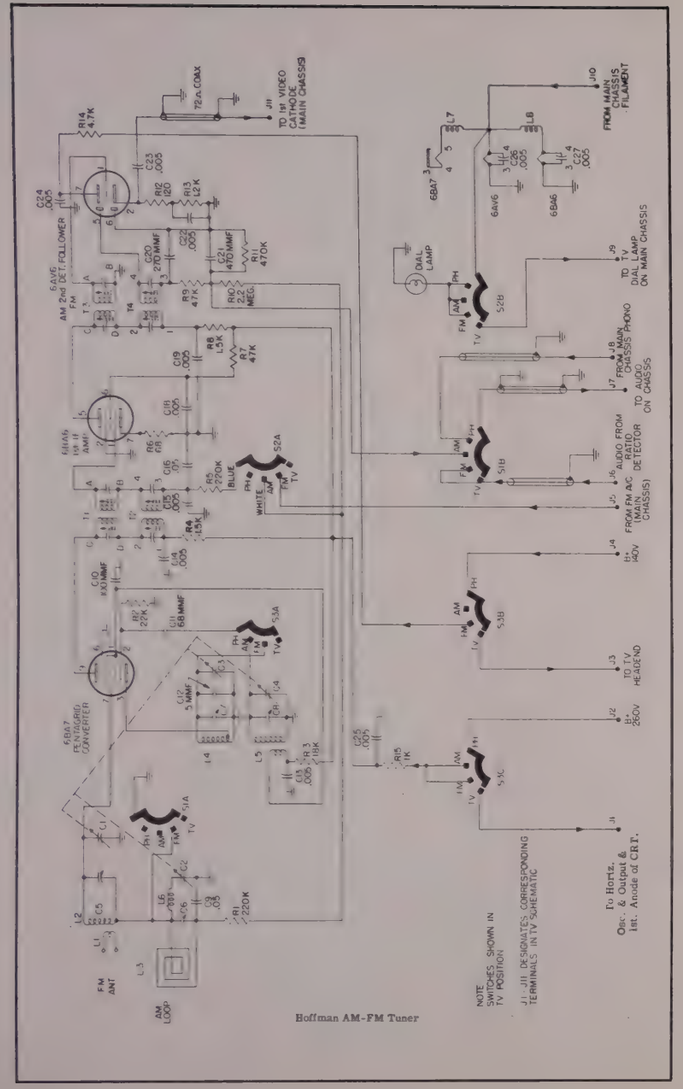
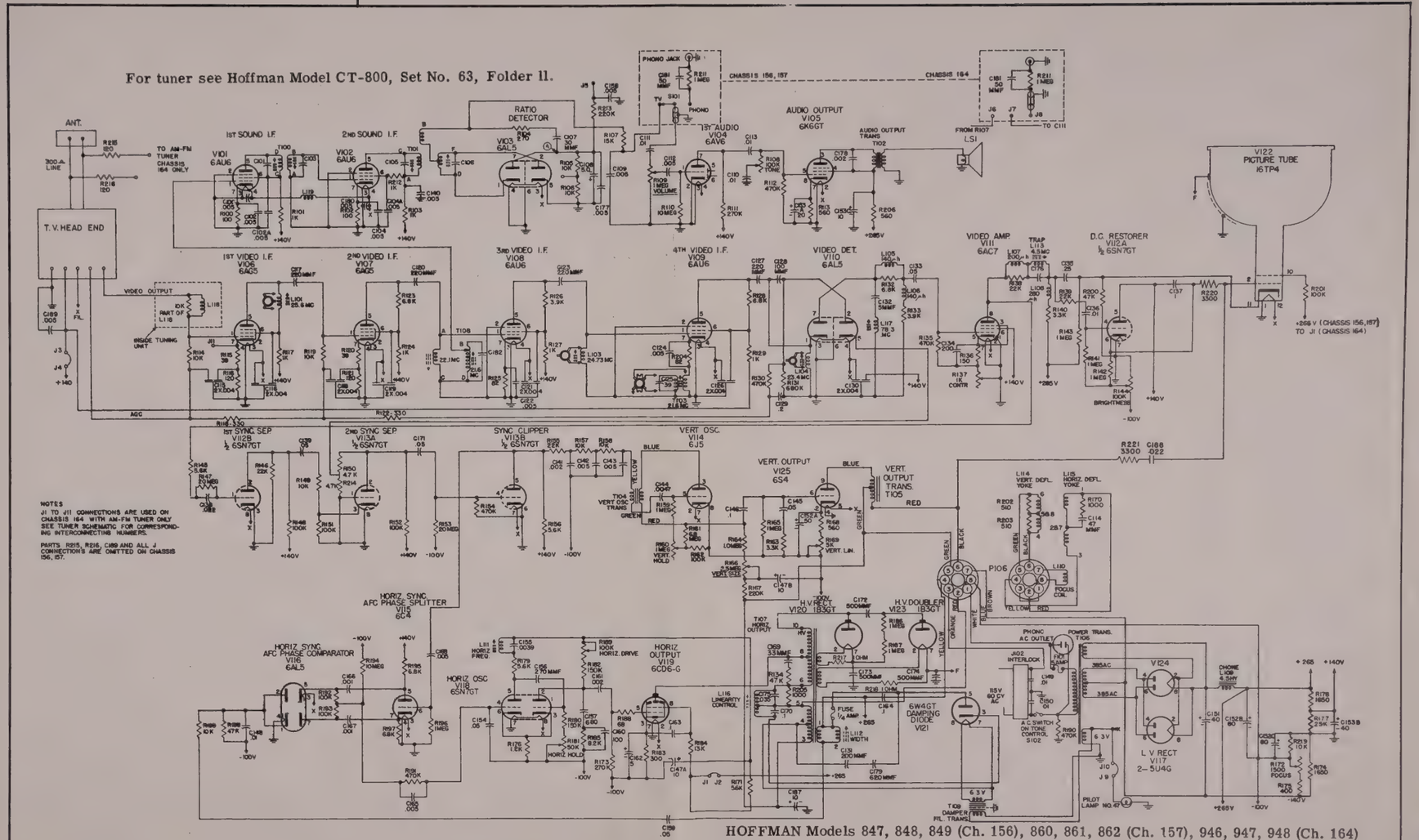

SCHEMATIC DIAGRAM
FOR I F AMPLIFIER ALIGNMENT CONNECT THE HIGH SIDE OF THE SIGNAL GENERATOR TO THE OSC / MIXER TUBE (V-3) BY REMOVING ITS SHIELD & SLIPPING A TIGHT FITTING TUBE SHIELD OVER THE BULB OF TUBE & CONNECTING THE GENERATOR TO IT. USE ENOUGH SIGNAL GENERATOR OUTPUT TO OBTAIN APPROX 2 VOLTS AT THE VOLTMETER, WHICH IS CONNECTED ACROSS R-118. L-113 IS ADJUSTED FOR MINIMUM VOLTAGE AS OBSERVED ON VOLTMETER, ALL OTHER I F AMPLIFIER ADJUSTMENTS ARE ADJUSTED FOR MAX VOLTAGE
CONNECT GENERATOR HERE FOR I F AMPLIFIER ADJUSTMENT
ANTENNA INPUT 300 OHMS
V1 6BC5 (6AG5) 1ST RF AMP
V2 6BC5 (6AG5) 2ND RF AMP
V3 6J5 OSC / MIXER
24.5 MC
21.75 MC
23.4 MC
24.6 MC
25.6 MC
4.5 MC
V101 6AU6 1ST I F AMP
V102 6AU6 2ND I F AMP
V103 6AU6 3RD I F AMP
V104 12AU7 VIDEO DET 1ST VIDEO AMP
V105 12AU7 2ND VIDEO AMP 1ST SYNC SEP
V106 12AU7 SYNC. AMP 2ND SYNC. SEP
V107 6SN7-GT VERT OSC / AMP
V108 6AU6 AUDIO I F AMP
V109 6AL5 FM DET
V110 6AV6 1ST AUDIO AMP
V111 6AQ5 AUDIO OUTPUT
V112 5V4G LOW VOLT. RECT.
V113 6SN7-GT HOR OSC.
V114 6BQ6 HORIZONTAL AMP.
V115 1X2 HI VOLT RECT
V116 6W4-GT DAMPER
V118 KINESCOPE
PHONO INPUT
PHONO
TELEVISION
PL-106 PIN VIEW
LUG VIEW
FOR SOUND I F ALIGNMENT CONNECT VOLTMETER HERE
VOLUME
FOCUS
BRIGHTNESS
PICTURE
VOLTAGE DEPENDS ON SETTING OF BRIGHTNESS AND PICTURE CONTROLS
VOLTAGE DEPENDS ON SETTING OF PICTURE CONTROL
L-105 DEFLECTION YOKE
VERTICAL HOLD
VERTICAL LINEARITY
HEIGHT
HORIZONTAL HOLD
HORIZONTAL AMP.
HORIZONTAL DRIVE
HORIZONTAL LINEARITY
WIDTH COIL
CAUTION - DO NOT MEASURE PLATE POTENTIAL
LOOKER POINT
TO ANT. TERM ON TS101
6.3 V. HEATERS
6W4-GT FIL.
6.3 V. AC
105-125 V. 60 ~ AC
PL-102 INTERLOCK CONNECTOR
PL-101
COUNTER-POISE WIRE
NOTE - TWO POSITION RANGE SWITCH (S1) SHOWN IN POSITION FOR RECEPTION OF CHANNELS 7 TO 13
FOR ADJUSTMENTS OF T-111 REFER TO 57RL546
LAST R SYMBOL R-207
LAST C SYMBOL C-189
LAST L SYMBOL L-113
LAST T SYMBOL T-112
NOTE - CAPACITOR VALUES ARE IN MMF UNLESS OTHERWISE SPECIFIED.
RESISTOR VALUE ARE IN OHMS & 1/2 WATT RATING UNLESS OTHERWISE SPECIFIED.
S-102 SHOWN IN TELEVISION POSITION
** FOR SOUND I F ALIGNMENT THE SIGNAL GENERATOR IS CONNECTED ACROSS R-118, WITH ENOUGH SIGNAL OUTPUT TO OBTAIN APPROX 1 VOLT AT VOLTMETER. ALIGN T-105 & THE PRIMARY OF T-108 FOR MAX INDICATION ON VOLTMETER. (VOLTMETER IS CONNECTED TO PIN 7 OF V-109 FOR THESE ADJUSTMENTS)
* FOR SECONDARY ADJUSTMENT OF T-108 CONNECT THE VOLTMETER ACROSS A 100 MMF CONDENSER C-135 & ADJUST FOR THE NULL

SILVERTONE Cat. No. 160-12


FM ANT
AM LOOP
TO 1st VIDEO CATHODE (MAIN CHASSIS)
FROM MAIN CHASSIS FILAMENT
DIAL LAMP
TO DIAL LAMP ON MAIN CHASSIS
FROM MAIN CHASSIS PHONO
TO AUDIO ON CHASSIS
FROM FM A/C DETECTOR (MAIN CHASSIS)
TO AUDIO FROM RATIO DETECTOR ON CHASSIS
TO TV HEATERS
TO Horiz. Osc. & Output & 1st. Anode of C.R.T.
NOTE SWITCHES SHOWN IN TV POSITION
J1-J11 DESIGNATES CORRESPONDING TERMINALS IN TV SCHEMATIC

Hoffman AM-FM Tuner

For tuner see Hoffman Model CT-800, Set No. 63, Folder 11.



NOTES
J1 TO J11 CONNECTIONS ARE USED ON CHASSIS 164 WITH AM-FM TUNER ONLY SEE TUNER SCHEMATIC FOR CORRESPONDING INTERCONNECTING NUMBERS.

PARTS R215, R216, C189 AND ALL J CONNECTIONS ARE OMITTED ON CHASSIS 156, 157.

HOFFMAN Models 847, 848, 849 (Ch. 156), 860, 861, 862 (Ch. 157), 946, 947, 948 (Ch. 164)

PRELIMINARY DATA

SET 97A FOLDER 7, 12

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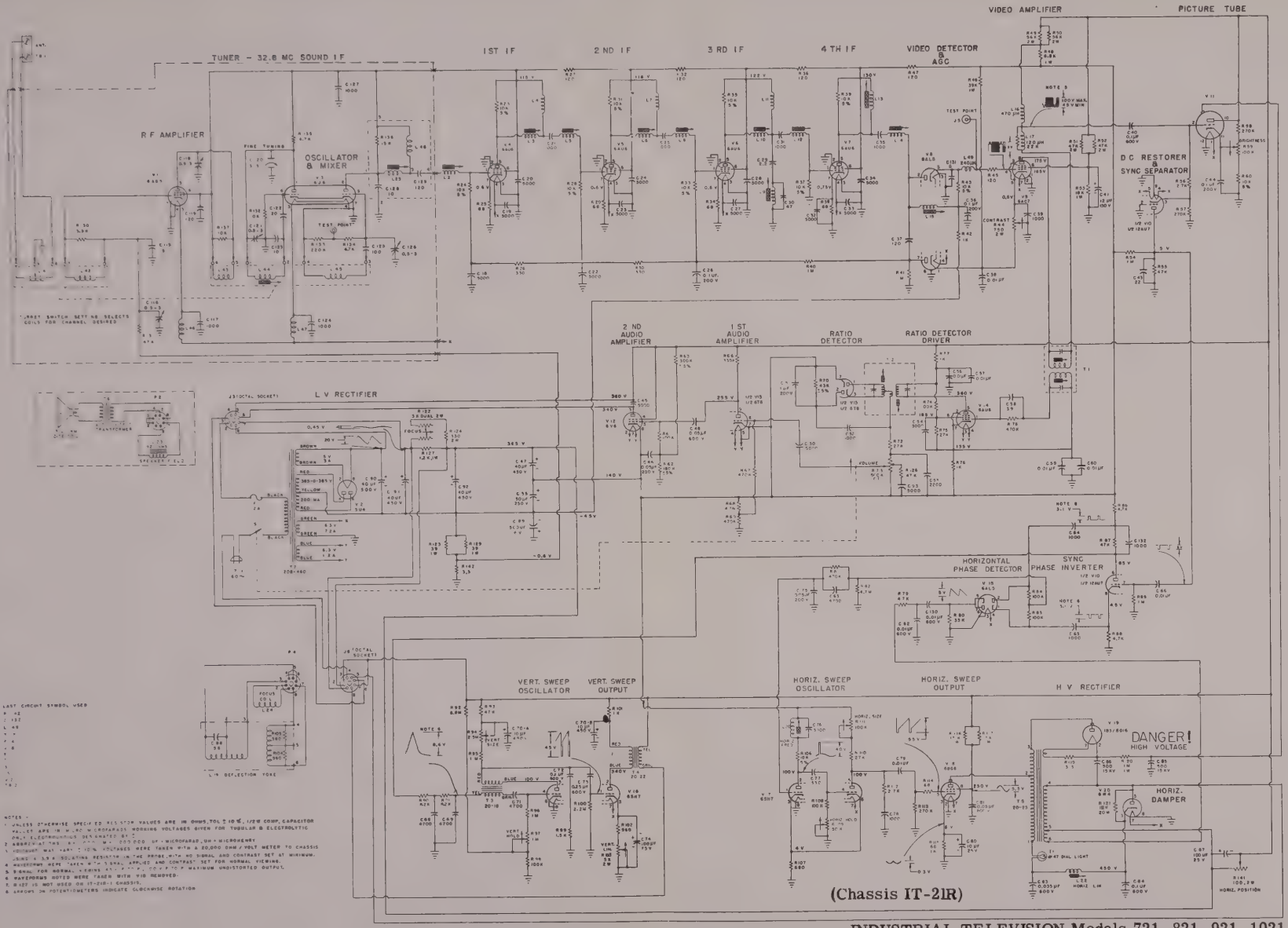
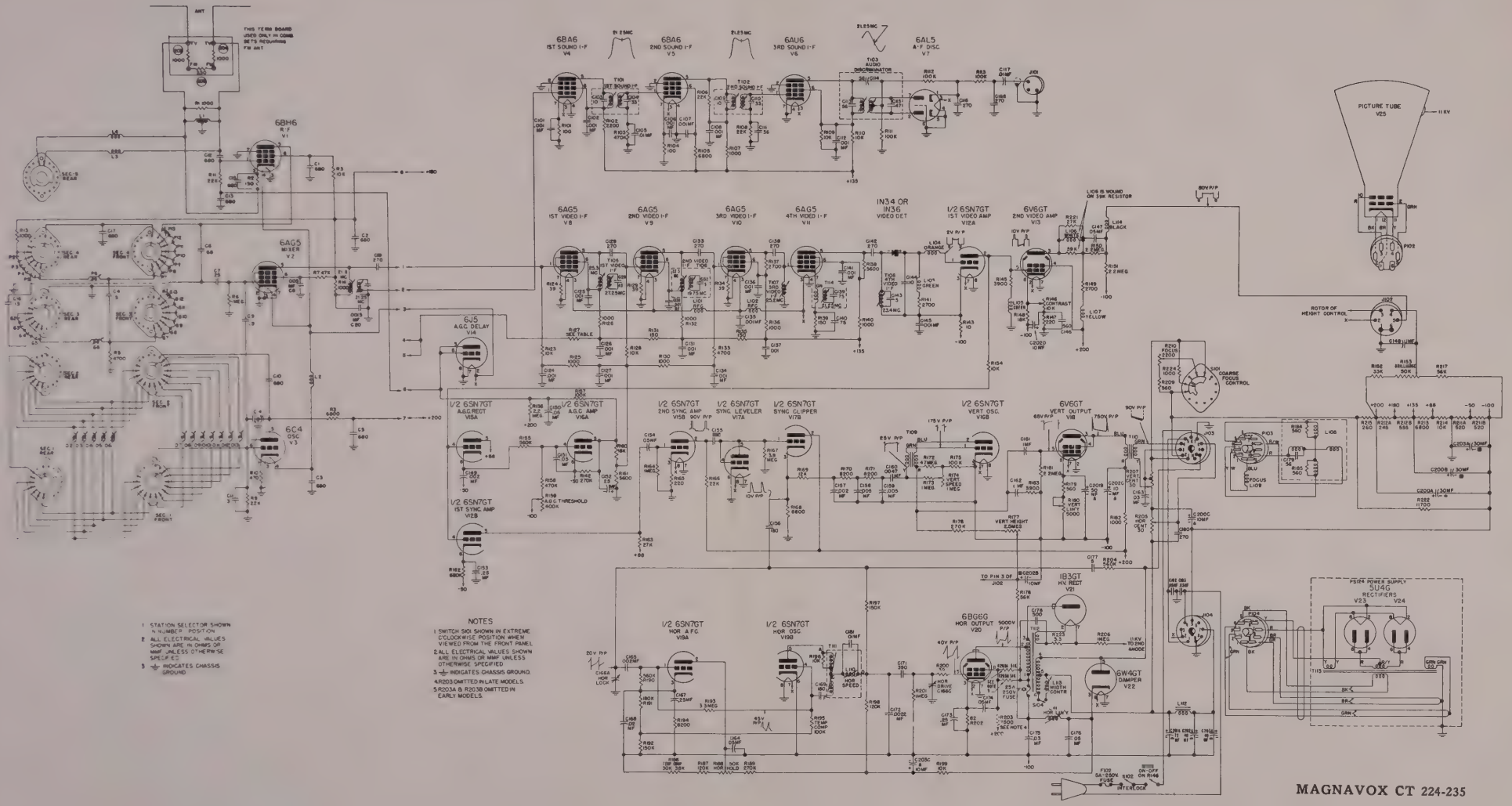


INDUSTRIAL TELEVISION Models 721, 821, 921, 1021


MAGNAVOX CT 224-235
NOTES
1 SWITCH SIOI SHOWN IN EXTREME CCLOCKWISE POSITION WHEN VIEWED FROM THE FRONT PANEL
2 ALL ELECTRICAL VALUES SHOWN ARE IN OHMS OR MMF UNLESS OTHERWISE SPECIFIED
3 ⏚ INDICATES CHASSIS GROUND.
4 R2003 OMITTED IN LATE MODELS.
5 R203A & R203B OMITTED IN EARLY MODELS.
1 STATION SELECTOR SHOWN IN NUMBER POSITION
2 ALL ELECTRICAL VALUES SHOWN ARE IN OHMS OR MMF UNLESS OTHERWISE SPECIFIED
3 ⏚ INDICATES CHASSIS GROUND

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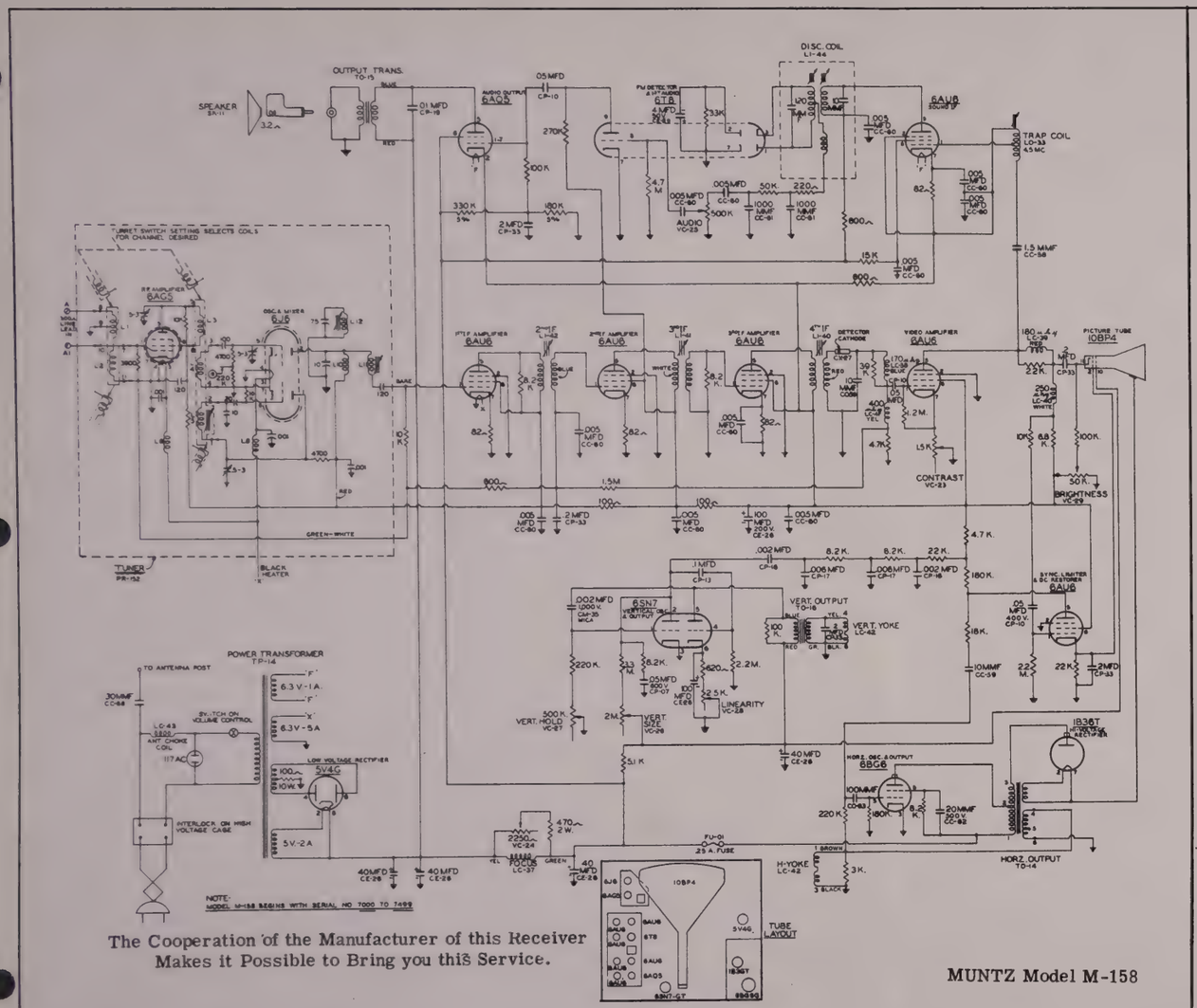
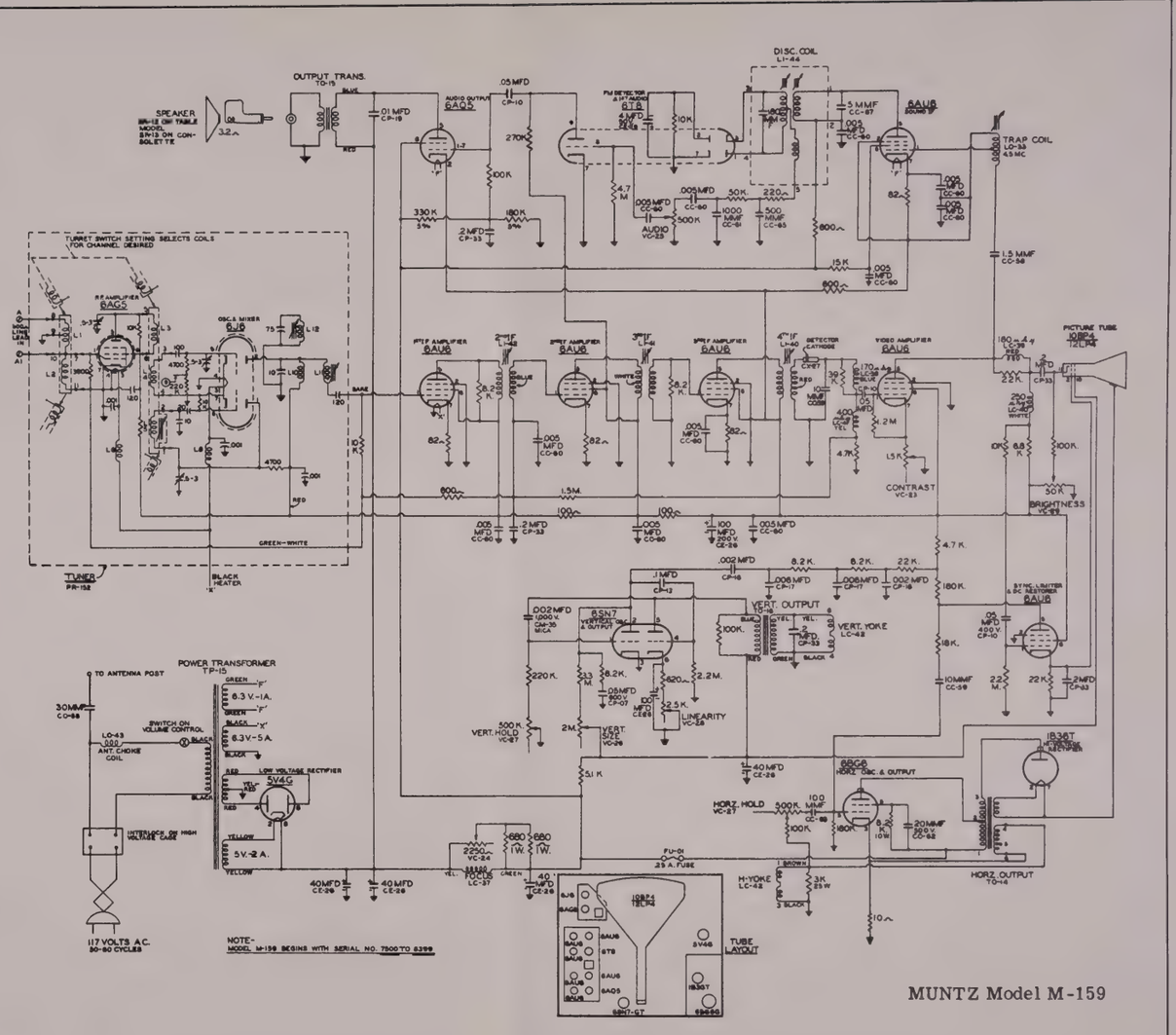
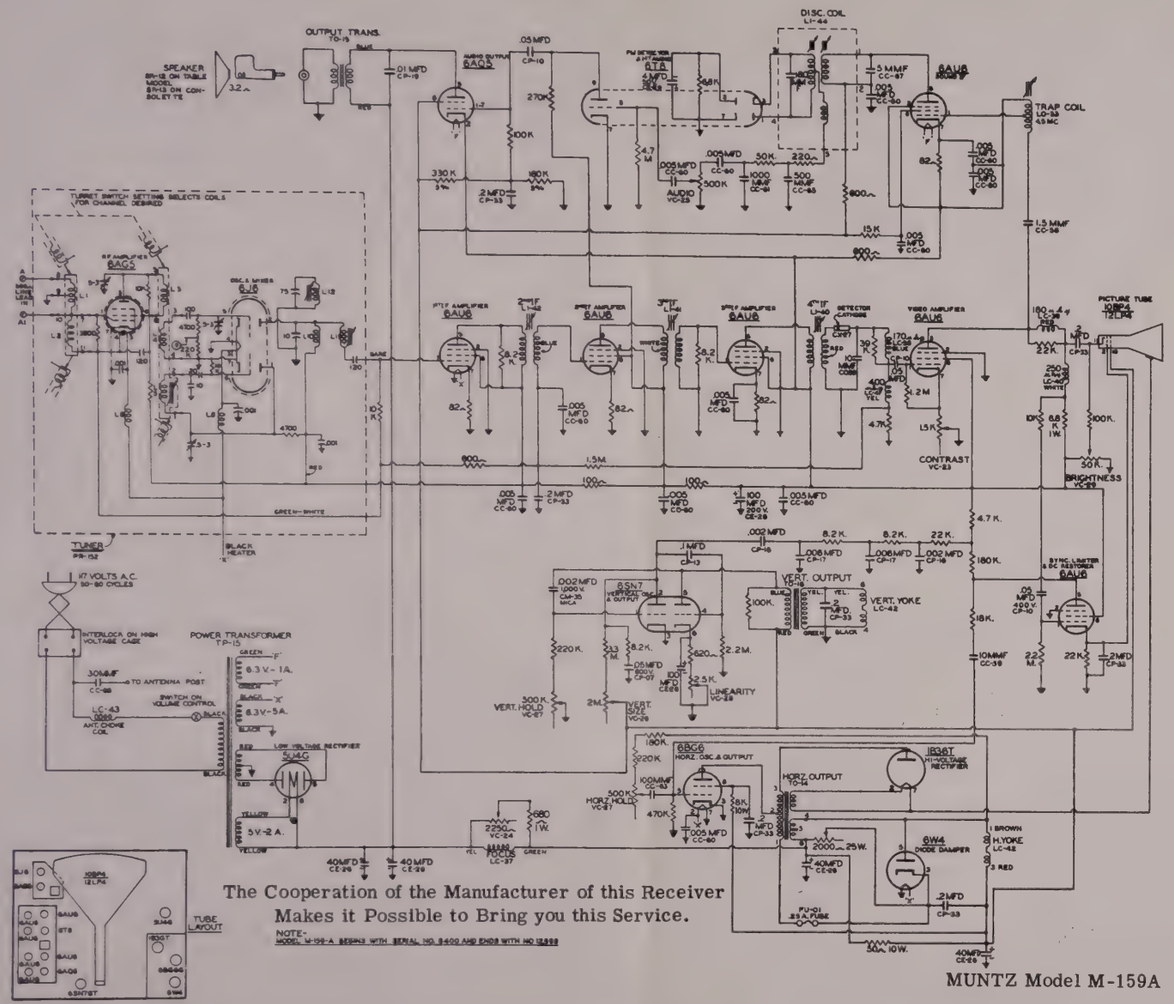


The Cooperation of the Manufacturer of this Receiver Makes it Possible to Bring you this Service.

MUNTZ Model M-158



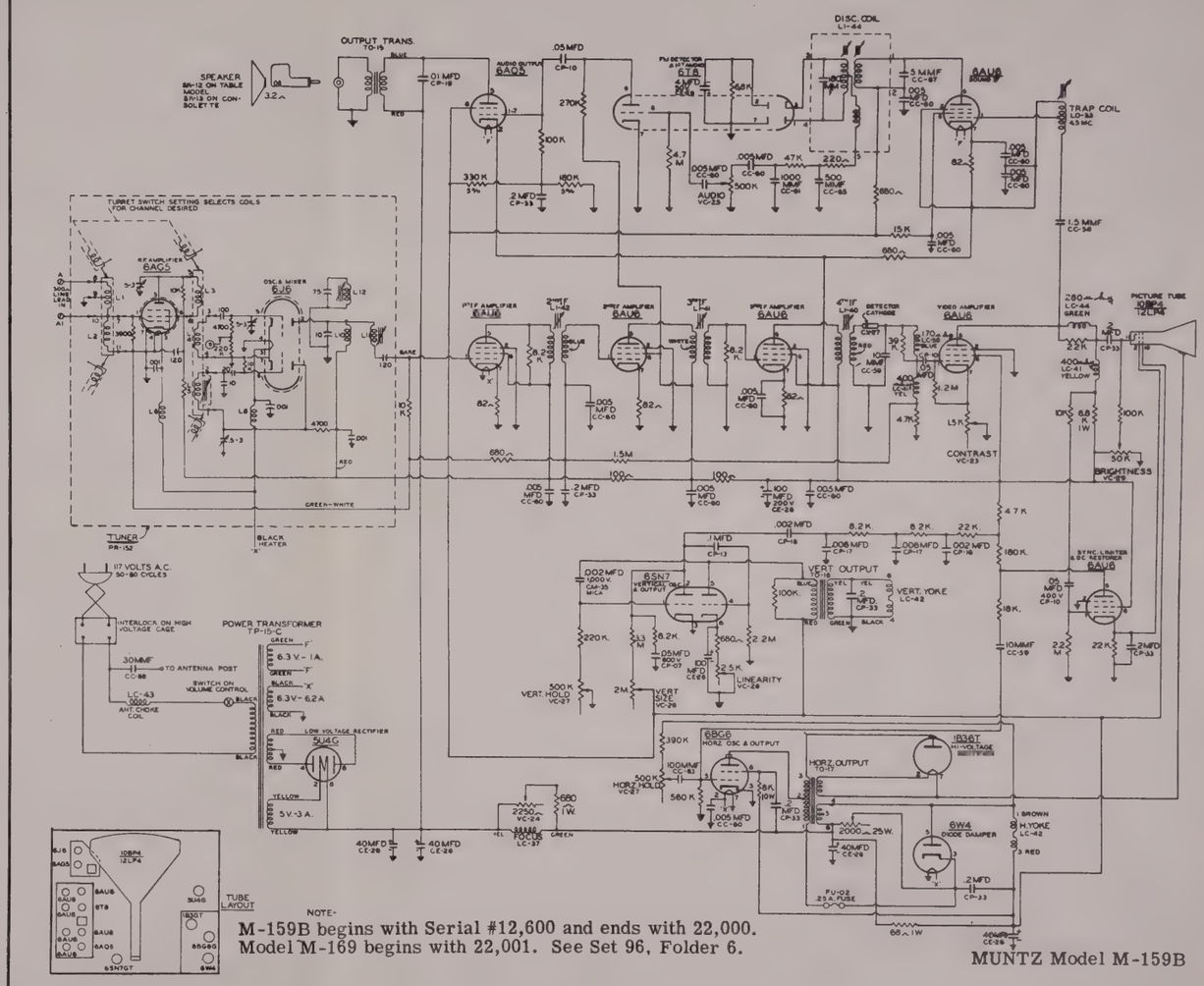
MUNTZ Model M-159



The Cooperation of the Manufacturer of this Receiver Makes it Possible to Bring you this Service.

NOTE- MODEL M-159-A BEGINS WITH SERIAL NO. 8400 AND ENDS WITH NO 12699

MUNTZ Model M-159A



NOTE-
M-159B begins with Serial #12,600 and ends with 22,000.
Model M-169 begins with 22,001. See Set 96, Folder 6.

MUNTZ Model M-159B

PRELIMINARY DATA

SET 97A FOLDER 10

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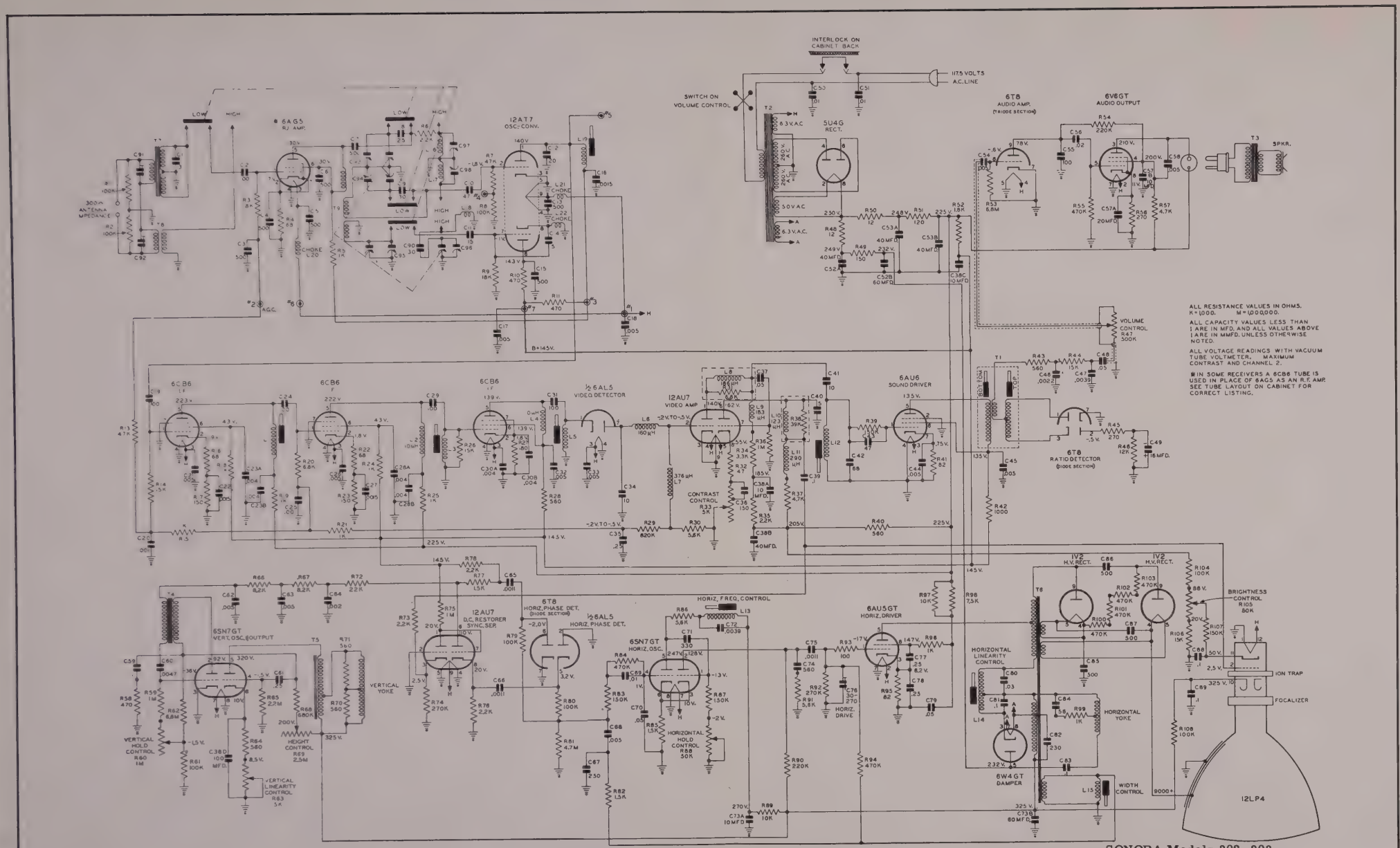
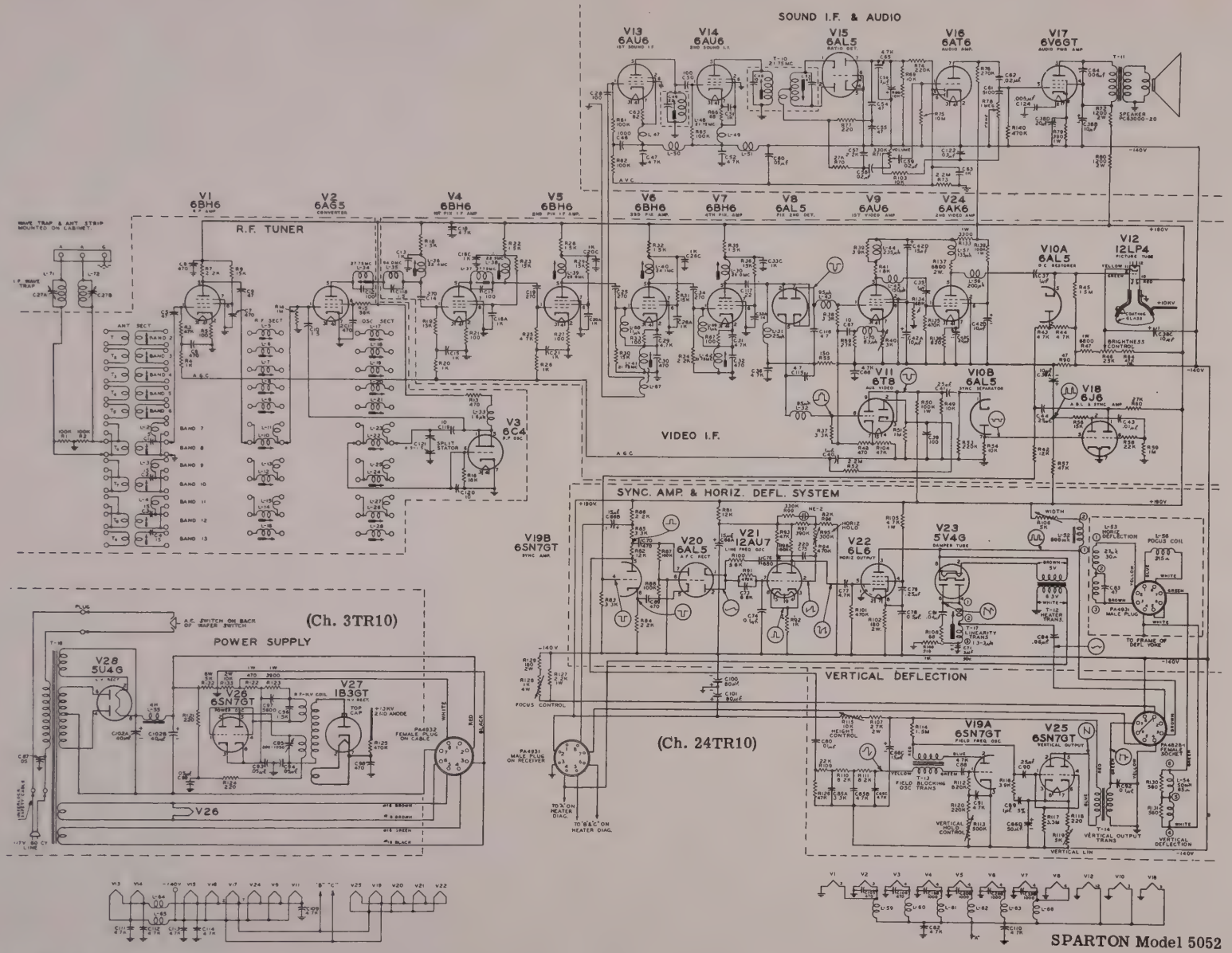

INTERLOCK ON CABINET BACK
117.5 VOLTS A.C. LINE
SWITCH ON VOLUME CONTROL
6T8 AUDIO AMP. (TRIODE SECTION)
6V6GT AUDIO OUTPUT
5U4G RECT.
6.3 V.AC
350 V.AC
SPKR.
12AT7 OSC.-CONV.
6AG5 R.F. AMP.
6CB6 I.F.
6CB6 I.F.
6CB6 I.F.
½6AL5 VIDEO DETECTOR
12AU7 VIDEO AMP.
6AU6 SOUND DRIVER
6T8 RATIO DETECTOR (DIODE SECTION)
VOLUME CONTROL R47 500K
ALL RESISTANCE VALUES IN OHMS. K=1000. M=1,000,000.
ALL CAPACITY VALUES LESS THAN 1 ARE IN MFD. AND ALL VALUES ABOVE 1 ARE IN MMFD. UNLESS OTHERWISE NOTED.
ALL VOLTAGE READINGS WITH VACUUM TUBE VOLTMETER, MAXIMUM CONTRAST AND CHANNEL 2.
* IN SOME RECEIVERS A 6CB6 TUBE IS USED IN PLACE OF 6AG5 AS AN R.F. AMP. SEE TUBE LAYOUT ON CABINET FOR CORRECT LISTING.
6SN7GT VERT. OSC. & OUTPUT
12AU7 D.C. RESTORER SYNC. SEP.
6T8 HORIZ. PHASE DET. (DIODE SECTION)
½6AL5 HORIZ. PHASE DET.
6SN7GT HORIZ. OSC.
6AU5GT HORIZ. DRIVER
6W4GT DAMPER
1V2 H.V. RECT.
1V2 H.V. RECT.
VERTICAL HOLD CONTROL R60 1M
VERTICAL LINEARITY CONTROL R63 5K
HEIGHT CONTROL R69 2.5M
VERTICAL YOKE
HORIZ. FREQ. CONTROL
CONTRAST CONTROL R33 5K
HORIZONTAL HOLD CONTROL R88 50K
HORIZONTAL LINEARITY CONTROL
HORIZ. DRIVE
HORIZONTAL YOKE
WIDTH CONTROL
BRIGHTNESS CONTROL R105 50K
ION TRAP
FOCALIZER
12LP4

SONORA Models 302, 303



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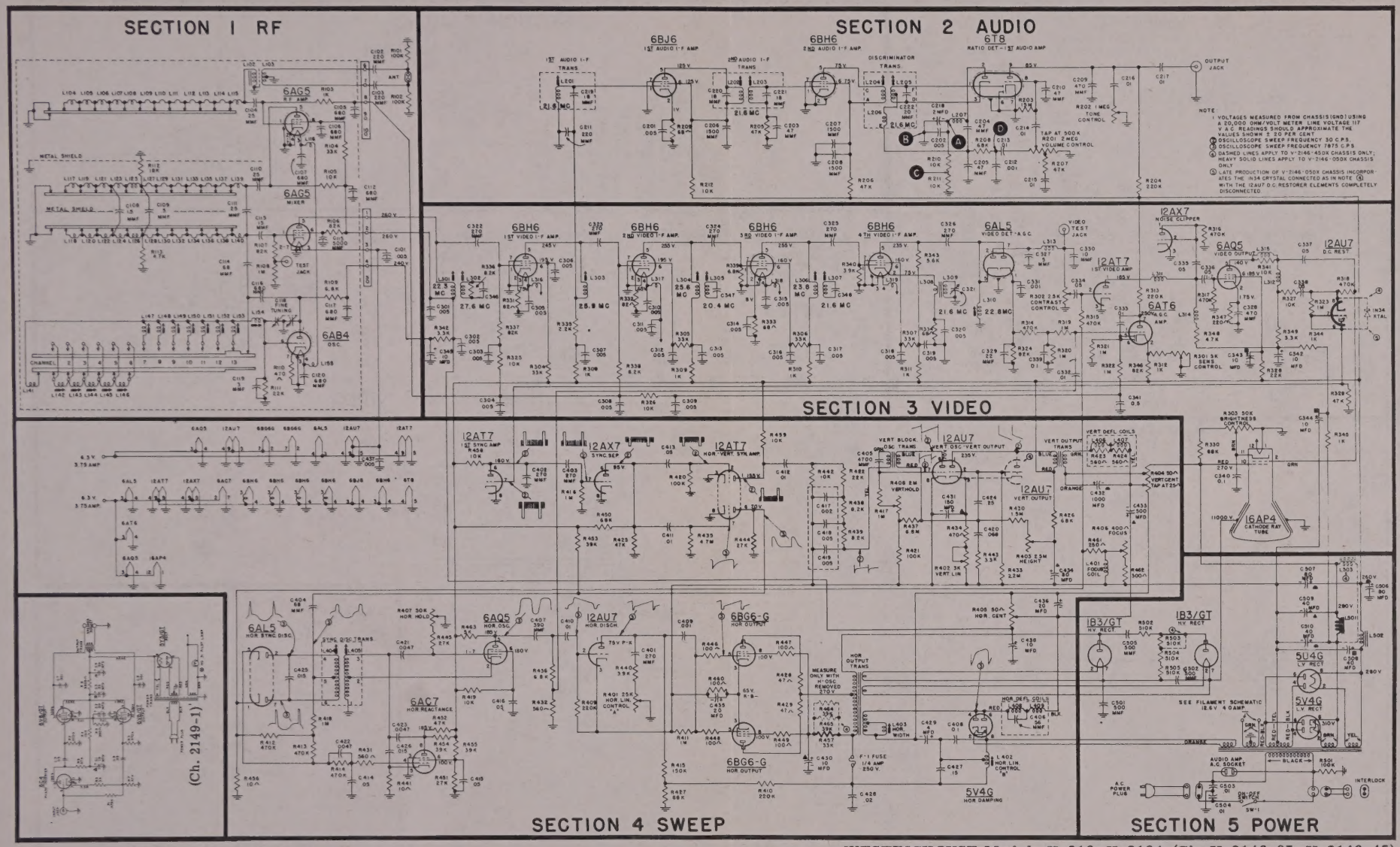
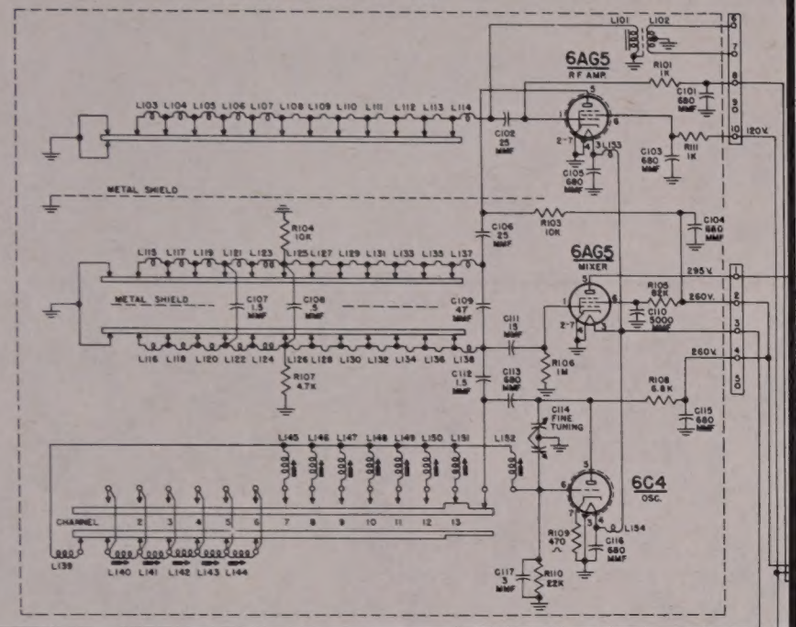
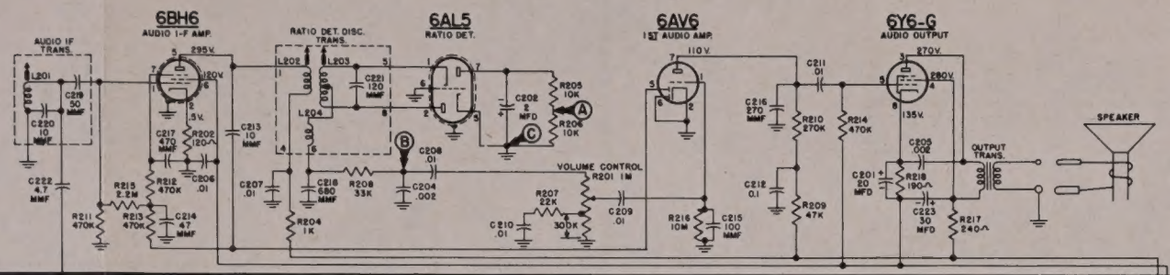


WESTINGHOUSE Models H-216, H-216A (Ch. V-2146-05, V-2146-45)

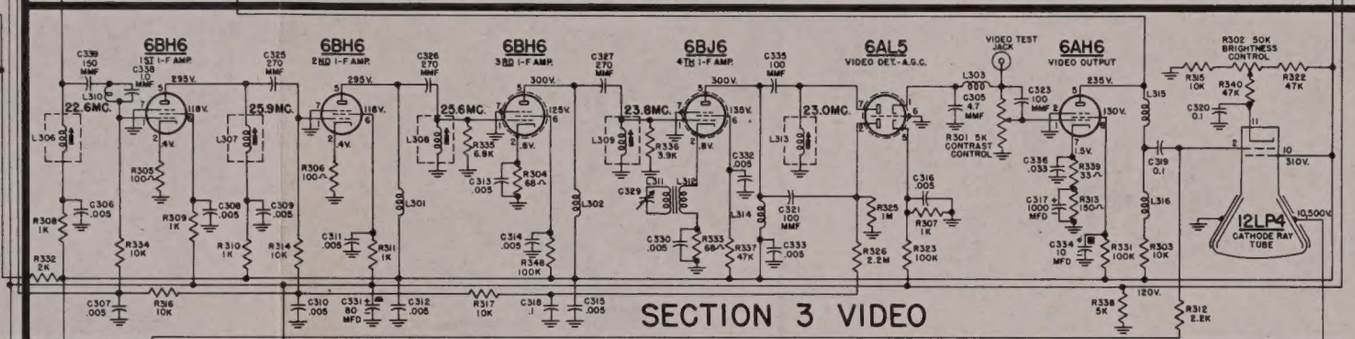
SECTION 1 RF

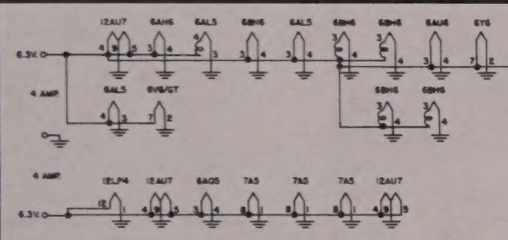


SECTION 2 AUDIO



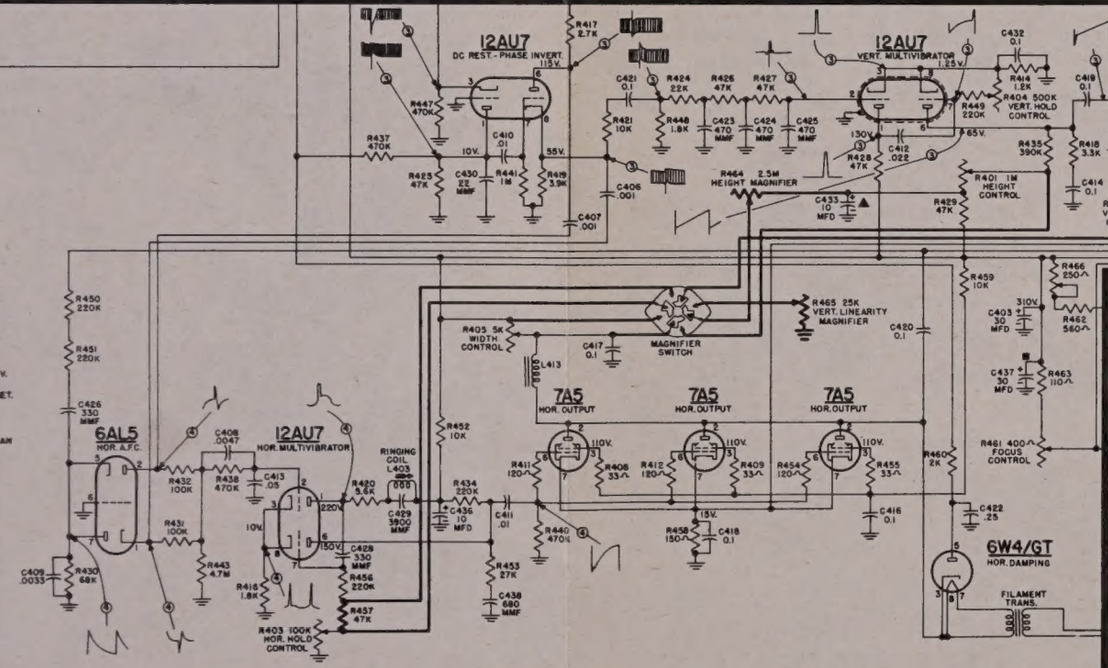
SECTION 3 VIDEO



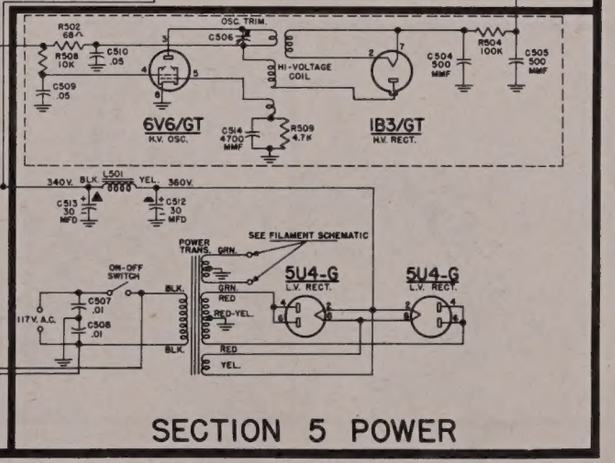


NOTE:
1. VOLTAGES MEASURED FROM CHASSIS(GND) USING 20,000 OHM/VOLT METER. LINE VOLTAGE 117 V. A.C. READINGS SHOULD APPROXIMATE THE VALUES SHOWN ± 20 PER CENT.
2. MAGNIFIER SWITCH IS SHOWN IN COUNTER CLOCKWISE POSITION AS VIEWED FROM FRONT OF SET.
3. OSCILLOSCOPE SWEEP FREQUENCY 60 C.P.S.
4. OSCILLOSCOPE SWEEP FREQUENCY 15,750 C.P.S.
5. HEAVY LINES POINT OUT ELECTRONIC MAGNIFIER CIRCUIT.
6. IN EARLY PRODUCTION CHASSIS A FEW COMPONENTS WERE OF SLIGHTLY DIFFERENT VALUE THAN SHOWN. REPLACEMENT PARTS SHOULD BE OF VALUES SHOWN.

SECTION 4 SWEEP



SECTION 5 POWER



WESTINGHOUSE Model H-242 (Ch. V-2150-31)

PRELIMINARY DATA

SET 97A FOLDER 14

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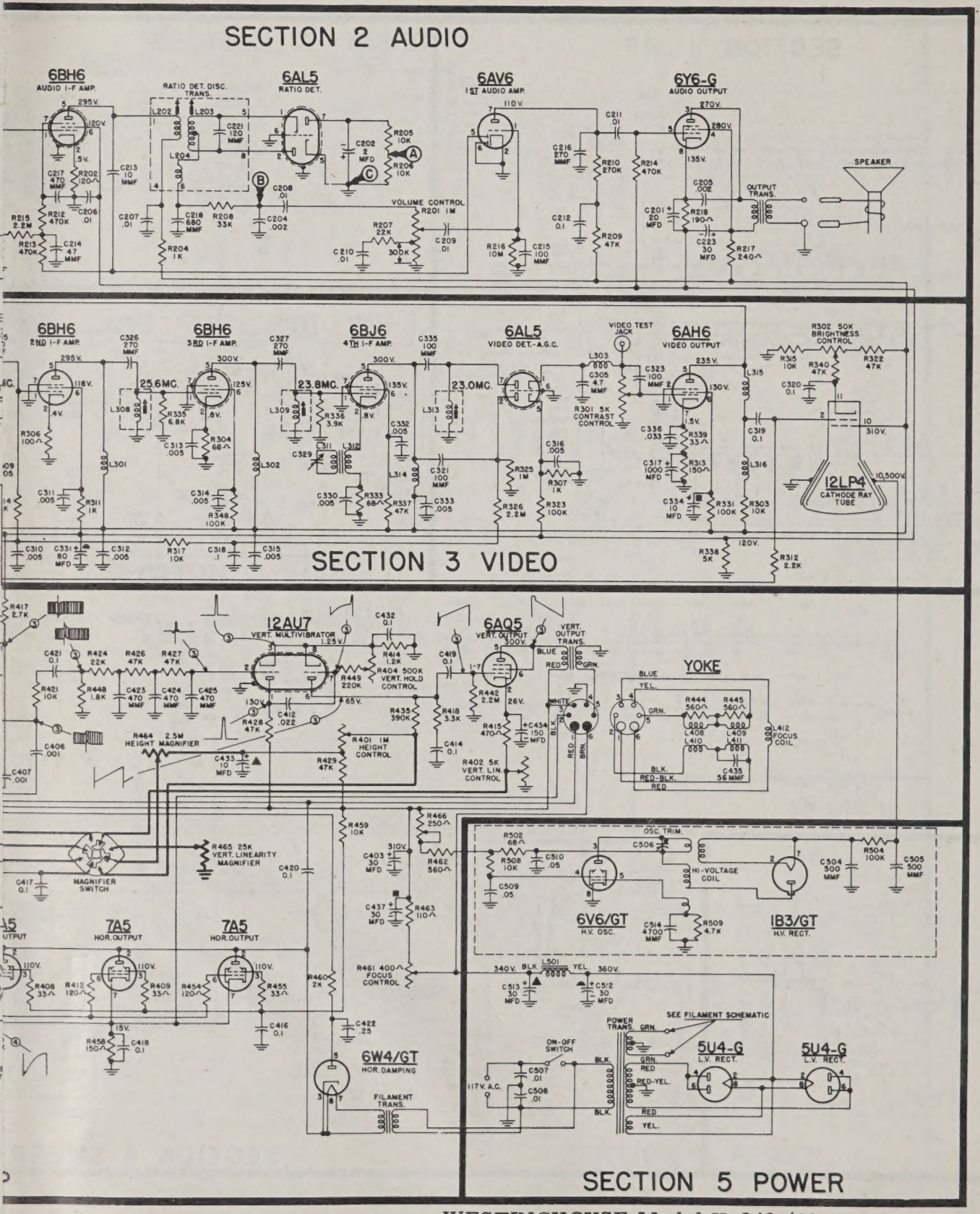

WESTINGHOUSE Model H-242 (Ch. V-2150-31)